NATIONAL SECURITY IMPLICATIONS OF GLOBAL WARMING:
THE U.S. MILITARY AT THE LEADING EDGE OF CLIMATE
RESPONSIVENESS

by
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Abstract

Global warming has impacts beyond merely environmental changes. This thesis examines ways in which climate change impacts national security by analyzing the relationship the U.S. military has to global warming. By evaluating examples of how climate change poses direct and indirect impacts on national security, this paper argues the U.S. military should leverage its social influence, threat prioritization, and technical expertise to position themselves as a potential leader in both mitigation and adaptation efforts against climate change.

The first chapter describes the information infrastructure within the Department of Defense and argues that the military is well suited to be a messenger against climate misinformation. The second chapter uses climate migration as an example of how climate change poses an indirect threat on national security and argues that a ‘threat multiplier’ like global warming should be more highly prioritized due to the cascading impacts to the U.S. The third chapter reviews the climate proposal the Blue New Deal and analyzes how politically Progressive climate plans intersect with military objectives and climate responsiveness as melting polar ice caps in the Arctic pose direct threats to national security interests and argues that a transition to renewable military energy de-escalates those threats and preserves energy security.

This thesis argues that the US military has both the means and incentive to be at the forefront of pro-climate efforts.

Thesis Reviewers: Dr. Lester Munson, Dr. Dorothea Wolfson, Dr. Alexander Rosenthal, and Dr. Kathy Wagner Hill
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<tr>
<td>ASF</td>
<td>Afghan Security Force</td>
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<td>AUMF</td>
<td>Authorization of Use of Military Force</td>
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<td>BBC</td>
<td>British Broadcasting Company</td>
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<td>BP</td>
<td>British Petroleum</td>
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<td>BRI</td>
<td>Belt and Road Initiative</td>
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<td>C-2A</td>
<td>Greyhound Aircraft</td>
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<td>CEQ</td>
<td>Council on Environmental Quality</td>
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<td>CNA</td>
<td>Center for Naval Analysis</td>
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<td>COP26</td>
<td>UN Climate Change Conference of the Parties</td>
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<td>COVID</td>
<td>Coronavirus Disease Conference of the Parties</td>
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<td>CO2</td>
<td>Carbon Dioxide</td>
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<td>CRA</td>
<td>Climate Risk Analysis</td>
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<td>DED</td>
<td>Deferred Enforced Departure</td>
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<td>DoD</td>
<td>Department of Defense</td>
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<td>DCRA</td>
<td>DoD CRA</td>
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<td>EEZ</td>
<td>Exclusive Economic Zone</td>
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<td>EPA</td>
<td>Environmental Protection Agency</td>
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<td>EO</td>
<td>Executive Order</td>
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<td>F-18</td>
<td>Super Hornet</td>
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<td>FEMA</td>
<td>Federal Emergency Management Agency</td>
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<td>FY</td>
<td>Fiscal Year</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GHG</td>
<td>Greenhouse Gases</td>
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<td>GOP</td>
<td>Grand Old Party (Republican)</td>
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<td>GWOT</td>
<td>Global War on Terror</td>
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<td>GRID</td>
<td>Global Report on Internal Displacement</td>
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<td>IMDC</td>
<td>Internal Displacement Monitoring Center</td>
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<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
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<td>IRGC</td>
<td>Iranian Revolutionary Guard Corps</td>
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<td>ISIL</td>
<td>Islamic State of Iraq and the Levant</td>
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<td>JTF</td>
<td>Joint Task Force</td>
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<td>MENA</td>
<td>Middle Eastern and African</td>
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<td>MILDEC</td>
<td>Military Deception</td>
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<td>MISO</td>
<td>Military Information Support Operations</td>
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<td>NASA</td>
<td>National Aeronautics and Space Administration</td>
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<td>NAS</td>
<td>Naval Air Station</td>
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<td>NATO</td>
<td>North Atlantic Treaty Organization</td>
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<td>NM</td>
<td>Nautical Miles</td>
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<td>NOAA</td>
<td>National Oceanic and Atmospheric Administration</td>
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<td>NPR</td>
<td>National Public Radio</td>
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<td>OHC</td>
<td>Ocean Heat Content</td>
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<td>PA</td>
<td>Public Affairs</td>
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<tr>
<td>PRC</td>
<td>People’s Republic of China</td>
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<td>TPS</td>
<td>Temporary Protected Status</td>
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<td>UN</td>
<td>United Nations</td>
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<td>USDA</td>
<td>US Department of Agriculture</td>
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<tr>
<td>USS</td>
<td>United States Ship</td>
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<td>WMD</td>
<td>Weapons of Mass Destruction</td>
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Introduction

The climate crisis is man-made and our time to respond through adaptation and mitigation efforts is limited. The last one hundred and fifty years of large-scale agriculture, deforestation, industrialization, and international shipping have led to an increase in greenhouse gases within the earth’s atmosphere to levels not seen in nearly three million years.\(^1\) Global warming is the cause of newly dynamic weather phenomena that impact food production and the livability of affected areas, disappearing glaciers, increased flooding, and severe droughts causing water shortages and agricultural or domestic damage, and higher levels of air pollution and changes in air conditions favorable to spread of infectious disease and pathogens.\(^2\)

The vital signs of our planet are worsening due to these increases in greenhouse gases. These environmental changes impact people and daily life. The National Aeronautics and Space Administration (NASA) states that “the effects of human-caused global warming are happening now, are irreversible on the timescale of people alive today, and will worsen in the decades to come.”\(^3\) Just how these changes in climate effect our lives will unfold in various ways as temperatures continue to rise. To avoid the worst of these impacts, we must reduce global carbon emissions significantly and prepare for

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the consequences of the carbon emissions we have already contributed to the atmosphere.⁴

In the short term, there may be some benefits from a warming climate. Longer warm seasons may make for better conditions for growing crops initially, shipping commerce becomes more accessible as water ways open due to ice melts, and cold wave mortality rates are likely to decline.⁵ However, the long-term effects of increasing atmospheric temperatures far outweigh these temporary benefits. Water availability will cause draughts and agricultural challenges, increases in shipping industry activity will contribute to greenhouse gas emissions, and heat waves increase the likelihood for catastrophic weather events, heat stroke, and death.⁶

National and global leaders must take responsibility for their contributions and control their responses to these climate changes. The U.S. government has an obligation to protect Americans from these threats and secure means for abating and mitigating further consequences of global warming. This thesis analyzes ways in which global warming has both direct and indirect impacts on U.S. national security. It addresses how the Department of Defense (DoD) and American military industry are responsible for large quantities of carbon emissions as well as how they could better position themselves

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as a leader in energy transition and net zero operations. The chapters assess the messaging power of the Pentagon, the indirect threat of climate migration, and the direct threat of sea state changes due to global warming.

The first chapter of this thesis examines how military messaging could be used as a tool to combat misinformation, disinformation, and poor climate science education that leads to climate denialism pervasive in certain political and social groups. It argues that based on the information warfare and public information infrastructure within the DoD, they are well suited to champion science-backed apolitical messaging around climate change. By reviewing examples of how the U.S. military has historically been used to mold public opinion against perceived threats to national security, this chapter argues it should be used for corrective communication related to threats to the environment and increased extreme weather events due to global warming.

The next two chapters of this thesis present examples of how climate change poses both indirect and direct threats to national security. In the second chapter, climate migration is examined as an consequence from changes due to global warming that in turn can cause a cascading series of events or “global shockwaves” that lead to increased threats for U.S. national security. Specifically, the analysis focuses on the mass migration events in Syria following the Arab Spring finding that the catalyst of such events was born from regional food insecurity due to global warming induced wildfires which depleted the international wheat supply. Climate change in this case was a serious aggravating factor in the mass migration of people which is a known threat to national security.
The third chapter of this thesis examines the direct affect melting polar ice caps and changes in sea states are having on the operations of the U.S. Navy. This chapter reviews in detail the politically Progressive climate plan coined the “Blue New Deal” proposed by Senator Elizabeth Warren (D-MA) during her 2019 Democratic Presidential Primary campaign. The plan’s goal was to highlight the impact global warming is having on rising sea levels, identify renewable energy and sustainable infrastructure opportunities within the shipping industry, adapt the ocean economy to changes in sea states, and review the United States’ participation in key international maritime law. This chapter also analyzes the impact these changing ocean landscapes have in the Great Power Competition engagements emerging in the Arctic as tensions are rising over newly available fossil fuel resources due to melting ice caps. The goal of this chapter is to see what common ground there may be between adopting aggressive climate proposals like the Blue New Deal and the national security objectives of American presence on climate changing seas.

Climate change does not exist in a vacuum. As our environment changes due to global warming we can expect more catastrophic weather events like Hurricanes Harvey, Irma, and Maria—a trio of category 4 and 5 deadly storms that occurred in quick succession between August and October 2017 that devastated the Gulf Coast and Atlantic.7 We can expect climate change to act indirectly as a ‘threat multiplier’ that “significantly exacerbate(s) the underlying social, political, and economic conditions” behind revolts like Taureg militants in Mali, or the formation of ISIL aggravating the

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Syrian civil war due to increases in resource scarcity, ethnic strife, and government collapse. Global warming plays a role in food shortages, energy crises, and even the spread of global pandemics.

Climate change cannot be reduced to the impact only seen by the physical environment. On their own, each of these individual crises would be enough to impact human health and safety, the economy, or housing and employment. National security is threatened as each of these are weakened because of global warming. National security is an amalgamation of economic, food, cyber, energy, and environmental securities. It “goes beyond the obvious protection against military attacks, national security in the 21st century includes several non-military missions…[and] is the ability of a country’s government to protect its citizens, economy, and other institutions.” As this thesis analyzes instances where climate change threatens national security, it is not simply referring to the impediment of military missions but instead the threat global warming plays on the overall wealth, health, and wellbeing of the U.S. and its people.

Global warming is a global problem. Although this thesis will discuss ways in which the U.S. has contributed to the effects of global warming, climate resolutions must be global and incorporate the efforts of nations worldwide. However, this thesis remains focused on U.S. emissions and climate adaptation efforts as the United States ranks second in the world for carbon emissions from fuel combustion with over 5,100 million

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9 Ibid. 91.
Metric Tons of CO2.\textsuperscript{11} If the U.S. military were considered its own country, it would follow the U.S. as third highest consumer with more than 3,685 million Metric Tons of CO2, making it the largest institutional consumer of fossil fuel energy in the world.\textsuperscript{12}

The scientific consensus is clear that emissions of this magnitude are directly contributing to climate change. The United Nations (UN) releases the Intergovernmental Panel on Climate Change reports every six to seven years. In August 2021, the UN released its sixth assessment report stating that “without immediate and deep emissions reductions across all sectors, limiting global warming to 1.5°C is beyond reach”.\textsuperscript{13} The IPCC report highlights not only the need for adaptation measures but mitigation by actively transitioning away from fossil fuel use and towards more sustainable energy resources.

Transitioning to renewable energy comes with a price. Depending on the technology, economic costs are quoted anywhere between $13 to $45 billion per year.\textsuperscript{14} Another cost benefit analysis using energy-economy models warns that “projecting the costs of reducing carbon emissions is difficult because many assumptions must be made about how the world will evolve over a very long period of time with and without a control program”.\textsuperscript{15} The IPCC


report states that the G20, a group of twenty of the world’s major economies, needs to reach $285 billion of annual investments in nature-based solutions by 2050 to address “interrelated climate, biodiversity, and land degradation crises”, however, the G20 is only currently spending $120 billion per year.\footnote{United Nations. (2022). \textit{Climate Reports}. United Nations. Retrieved August 14, 2022, from https://www.un.org/en/climatechange/reports?gclid=CjwKCAjw6MKXBhA5EiwANWL0DGUxlZNg-Xv-z8oe7cOfTLV4yqBpmkrWmY6z9kRuhuzSdQQ85MKRoCX-0QA\textasciitilde{E}vD_BwE}

The cost of not reducing carbon emissions is more clearly measurable, however. With rising catastrophic weather events the Biden administration increased the Federal Emergency Management Agency (FEMA) budget from $500 million to $1 billion to fund Building Resilient Infrastructure and Communities (BRIC) and Flood Mitigation Assistance (FMA) projects.\footnote{FEMA. (2022, August 1). \textit{Biden-Harris Administration Announces over $1 Billion in Project Selections to Make Communities More Resilient to Climate Change and Extreme Weather Events}. Federal Emergency Management Agency. Retrieved August 14, 2022, from https://www.fema.gov/press-release/20220801/biden-harris-administration-announces-over-1-billion-project-selections-make} This is just one example of disaster response spending that addresses the aftermath effects of global warming as opposed to funding preventative measures intended to reduce greenhouse gas emissions and slow temperature rises. A Deloitte report finds that doing nothing to reduce emissions could cost the U.S. up to $14.5 trillion by 2070 compared to a gain of $3 trillion and over 1 million new jobs if the country were to rapidly decarbonize in the next 50 years.\footnote{Hosh, K., & Flaherty, C. (2022, January 25). \textit{Deloitte Report: Inaction on Climate Change Could Cost the US Economy $14.5 Trillion by 2070}. Deloitte. Retrieved August 14, 2022, from https://www2.deloitte.com/us/en/pages/about-deloitte/articles/press-releases/deloitte-report-inaction-on-climate-change-could-cost-the-us-economy-trillions-by-2070.html} This thesis will later analyze the economic commitments and budgetary prioritizations of the Department of Defense as it relates to decarbonization.
The U.S. military has a responsibility to position itself as a leader in the pro-climate agenda. Climate change is a ‘threat multiplier’ for U.S. national security threats. As this thesis analyzes the military’s role as a messenger for climate change, the indirect threat of issues like climate migration, and the direct threat of melting polar ice caps, the focus of these concerns is preserving national security. It is important that the Department of Defense more aggressively adopt mitigation and adaptation methods not just for the purpose of better protecting the environment, but to minimize impacts to energy security, military operations, the U.S. economy, and civil unrest at home and abroad.
Chapter 1

A Strategic Military Response to Climate Denialism

Despite the increasing evidence and acceptance of the reality of the planet’s changing climate, climate change denial persists in certain political and social groups most impacted by misinformation, disinformation, and poor climate science education. These denial claims center on one of two main ideas: the climate crisis is false in its entirety or that human action is not the cause of the climate crisis. These misinformed opinions are part of the American political divide and contribute to slowed legislative inaction on efforts that would more directly and proportionally address the reality of the climate crisis. Outside of policy efforts to abate the threats of the climate crisis, there is a need for strategic messaging by valued stakeholders to combat the effects of misinformation on climate reality. The U.S. Department of Defense (DoD) has the means and incentive to lead the charge on both mitigation and messaging measures necessary to adequately address the climate crisis.

The U.S. military has voiced its own concerns before Congress regarding the climate crisis and the direct threat it poses to national security, the continued operations of DoD assets likely to be impacted by severe weather, and predictions of climate-based wars as environmental displacements and conflicts increase. These assessments have yielded a few limited plans on how the U.S. armed forces intend to mitigate their own

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contributions to greenhouse gas emissions. Aside from the need for military mitigation though, there is an opportunity for military messaging to serve as a bridge to the political gap between environmentalists and climate deniers. The opportunity to utilize the military as a messaging tool is supported by examining the history of the U.S military’s impact on public opinion towards social issues through leveraging media coverage to prepare a nation for war. This relationship is complicated as the military has its own embedded conservative political lean which tends toward climate denialism. It is reasonable to assume that a realignment of climate-focused military objectives openly and intentionally broadcasted to their most conservative base would aid in combating climate denialism and the threat that poses to national security.

**Military Messaging and Information Warfare**

Military members as an information source are considered by many to be a highly trusted group, especially among ideological conservatives.\(^{21}\) The DoD has a public expectation to relay matters of importance with truth and without bias. Framing the climate crisis in terms of national security provides a third perspective to the political polarization surrounding it. Specifically, this acknowledges the reality the geostrategic threat the climate crisis poses on national defense, and how through internal policy, public messaging campaigns, and strategic goal development, the DoD can be used as a political tool in changing public buy into the government more aggressively addressing the climate crisis.

The military’s ability to sway public opinion on their efforts can be reviewed through the propagandizing of the media. A government has no power if there is no public support. A prime example of this relationship occurred in the aftermath of September 11, 2001, with the U.S. involvement in Afghanistan and especially Iraq. In pursuit of a broad terrorist threat Congress approved the Authorization for Use of Military Force (AUMF) in late 2001 giving the president ambiguous authority to leverage military forces against virtually any enemy thought to be in association with 9/11 attacks. This broad scope of authority continued as U.S. forces invaded Iraq under the guise of biomedical weaponry threats. The Weapons of Mass Destruction (WMD) threat proved to be false and was revealed to be a strategic narrative justification for military deployment in the region. The media narrative around the Iraq invasion was largely positive, that narrative was built based on carefully selected information released to the media by the Pentagon with the intention of building a public swell of support around the decision.

Strategic narrative building is a military tactic. Operations such as military deception (MILDEC) or military information support operations (MISO) are used in combat or threat environments regularly to intentionally deceive or manipulate adversarial decision making. While these carefully coordinated operational tactics are used to influence adversaries, similar approaches can be used in public affairs (PA) work as well. There is a link between the intelligence and information warfare communities where MISO and PA are concerned. While PA is intended to represent the military to the public, sharing pertinent information to the media, MISO is often thought of as less-than-
truthful as its intention is to influence adversaries. Where the DoD must be critical is when these two information concepts cross to avoid intentionally misleading the public.

What this relationship between information and the military reveals is a source of power and influence on public knowledge and support for initiatives. At a Conflict and Peace Journalism conference in the late 1990s a group of journalists and media academics gathered and outlined how the media prepares a country for war. In their forum they identified four stages: the preliminary stage, the justification stage, the implementation stage, and the aftermath. Applying the Iraq War example, in the preliminary stage there is “mounting concern” over which the public comes to the media to learn initial news, in this case news of possible WMDs. The justification stage implies a sense of urgency to reestablish normalcy, now the WMDs do not just exist but pose a direct threat to the public and armed force is required to eradicate them. In the implementation stage, there is censored of pooled control of coverage, in Iraq this was the consensus support for invasion with very little opposing coverage. Lastly, the aftermath stage covers normalcy reestablishing itself in the issue, forcing the topic lower on the news agenda. As time passed on the wars in Iraq and Afghanistan, coverage continued to decline. The forum declared these as stages of wartime propaganda, not formally implemented by military information professionals, but merely a patterned and observed formula for the relationship between the military and the media.


24 Ibid.
The regularity of this relationship reveals potential leverage on public support for other issues. It is reasonable to assume that were the DoD to prioritize the climate crisis as an adversary as publicly as they have previous campaigns, it would influence the media’s responsiveness and therefore the public’s opinion on the matter. What the DoD prioritizes, however, is subject to the direction of the Commander-in-Chief who is elected and in recent administrations has no direct military service experience. The political leaning of the Pentagon must be accounted for when considering its potential role in furthering a public messaging agenda on an adversary that is far less tangible than terrorist threats or state actors and one that some members of the country deny even exists. In order to spearhead this messaging role, the DoD must both take on internal policy changes as well as mitigation actions against the climate crisis. The overall direction of these policy changes, however, depends on the politics of the executive leadership.

In her book *How Change Happens: Why Some Social Movements Succeed While Others Don’t*, Leslie Crutchfield argues that there is an equal importance that social change leaders emphasize policy reforms as well as advocating for a shift in social norms. Many psychologists, sociologists, and anthropologists have studied how changes in social norms relating to climate science have led to increases in climate denialism among certain corners of American culture. When political leadership is struggling to

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convince their constituents of the reality of global warming, those social norms must be addressed before policy changes can hold their desired weight.

**Misinformation and Climate Denialism**

There has been great damage done to the scientific community by misinformation messaging intended to cause Americans to question the reality of the climate crisis. According to an analysis by the Center for American Progress in 2021, 139 elected officials in the 117th Congress have made recent assertions challenging the established scientific consensus that climate change is human made.\(^{26}\) Some outright deny the reality of climate change by relying on unproven theories from “sunspots and solar flares, the unscientific and politically flawed consensus model, [to] the environmental benefits of carbon dioxide”\(^{27}\) to explain away global warming. The truth of climate science is human action has caused “anthropogenic sources of greenhouse gases are leading to a buildup in the atmosphere, which leads to a general warming of the global climate and an alteration in the statistical distribution of localized weather patterns over long periods of time”\(^{28}\). This is not merely an assessment but a scientific consensus by the largest bodies of national and global climatology experts.

A Pew Research Center study conducted in 2020 found that two-thirds of Americans support more government action to address the climate crisis. The study

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\(^{28}\) Ibid.
showed that there is bipartisan consensus that global climate change is affecting their communities and the federal government is doing too little to reduce the effects of climate change. Over 70% of Americans polled agreed that measures like tree planting for carbon absorption or tax credits for businesses using carbon capture technology should be used to reduce the effects of climate change.29

Climate denialism in this case is not strictly defined as a denial that climate change is real. The denial of human impact damages the opportunity for action. Using the narrative that human action is not responsible for global warming absolves human responsibility to make any changes. Adopting mitigation measures that actively seek to curb carbon emissions imply that human made industries hold a level of responsibility for changes to the climate. Conversely, adaptation measures seek to mold these changes as opposed to reduce future emissions. The Center for American Progress analysis found "that the same 139 climate-denying members have received more than $61 million in lifetime contributions from the coal, oil, and gas industries."30 Climate denialism becomes politicized in the partisan response to and influence of large emitters like the fossil fuel industry.

Despite the scientific consensus that both mitigation and adaptation measures must be used to address the human made effects of global warming, a political stalemate has developed over climate policy in the U.S. The conflict stems from beliefs that are

built by societal norms, not individual preferences, and are representative of political ideologies from left, right, and center, as well as urban, rural, religious, racial, and generational cultural identifications. Many who form denial opinions toward climate science can best be understood in terms of how their views on it mesh with others typically associated with what is termed as a culture war. In it the division within our society is based on whether one believes in or agrees with issues (e.g., health care, abortion, gun control, global warming) they identify within their culture, including political affiliation.

In a Yale project on climate change communication between 2009-2011, Anthony Leiserowitz identified the “Six Global Warming Americans”: the alarmed, the concerned, the cautious, the disengaged, the doubtful, and the dismissive. These postures range from most aware and alert to least engaged and trusting of climate change and its threat and provide a framework into how psychologists have categorized the climate denialism as a function of the culture wars. In January 2022, Leiserowitz followed up on his research to find that over time the percentage of alarmed Americans has nearly doubled and outnumbers the dismissive 3 to 1. Despite the changes in levels of concern, language and messaging around climate change continues to be politically coded and has seen slowed legislative action in response.

33 Ibid.
From a national security standpoint, misinformation and disinformation are active tactics used to influence the psychological response to certain objectives. These tactics have been applied to climate science. However, these psychological operations launched with the intent to sow cultural discord among support for or against scientific truth has not come solely from adversarial state actors. The social debate over the climate science consensus is perpetuated by American political actors to benefit their impacted stakeholders. Those who still claim global warming is a ‘hoax’ reside largely in the Republican voter base. The GOP, however, has largely switched from pure denialism to acknowledgement and adaptation. The scientific consensus places the party in a delicate political dance where they attempt to appease their base who still fall victim to climate denial misinformation, while also not outright denying scientific truth on the public stage but staying in the adaptation phase of climate responsiveness to avoid making policy decisions that would impact the fossil fuel industry.\(^\text{34}\)

In 2016, Michael Mann published his book *The Madhouse Effect: How Climate Change Denial is Threatening Our Planet, Destroying Our Politics, and Driving Us Crazy*. Mann is a distinguished professor of Atmospheric Science and the director of the Earth System Science Center at Penn State University and has contributed to the historic and scientific understanding of global warming-based climate change as a climatologist and geophysicist.\(^\text{35}\) Mann describes the dynamic between climate change and politics in a chapter titled “Hypocrisy—Thy Name is Climate Change”.


Mann describes a 2012 political stalemate in Norfolk, VA, home to the world’s largest naval base, where rising sea levels and high tide due to global warming were causing recurring floods and storm surges. However, Mann notes that when legislators requested funding to address these environmental impacts, “Tea Party Republicans cried foul. The terms climate change and sea-level rise, they felt, were ‘liberal code words’. Only when these words were replaced with the ‘politically neutral’ phrase recurrent flooding did state Republicans, including the climate change-denying governor, Bob McDonnell, approve the study.”

Even with increasing bipartisan concern for the effects of climate change, political language and messaging around global warming slow or even impede climate action. In this sense, climate denialism is not only considered an outright denial of the effects of global warming but may be considered a denial of its prioritization or importance for the sake of political gain.

**Politization of Environmentalism**

The GOP walks this fine line by attempting to minimize the impact humans have on global warming, implying a lack of responsibility to action or prioritization. This is still a form of denialism, but it absolves industries like the fossil fuel industry from having make large scale operational changes in response to the climate crisis if they are not publicized as the leading cause for global warming and therefore extreme weather events. The U.S. military, like the GOP, benefit from and have a history of working closely with the fossil fuel industry. The party and the DoD have a “tight alliance

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between the cultural politics…and power of fossil fuel and related industries.”\textsuperscript{37} This is reflected in the military and the GOP’s preference toward adaptation measures as opposed to mitigation measures against the effects of the climate crisis. Politically, “to acknowledge anthropogenic climate change is to empower liberals, open the door to additional taxes and regulations, and threaten the power of the fossil fuel industry”\textsuperscript{38} As for the DoD, this relationship should be remembered in a later discussion about the Navy’s use of partially renewable fueling products only to ultimately return to their standard fuel consumption.

Conservatives may benefit politically from climate denialism, but even Representative Matt Gaetz, a far-right Republican from Florida agrees that “climate denial is a bad political strategy,” and “at some point, you have to be for something to fix it.”\textsuperscript{39} Gaetz is right, considering polling from young conservatives who are looking for their party’s response to the climate crisis. Young Republicans are caught in a political crosshair between wanting to support their party while also joining their generation in the fight against climate change. Their intentions are “light years”\textsuperscript{40} ahead of their party’s elders as they push the GOP to develop their own climate response. Republicans are recognizing the political liability of not reconning with the climate crisis while also


\textsuperscript{38} Ibid.


needing to assure their climate denial base that their efforts are not a cave to the left. While there are still many leaders in the Republican party that will publicly deny the reality of the climate crisis as well as its prioritization, the party is diagnosing the need for a conservative climate response to the Democratic Green New Deal.

The partisan response to the climate crisis is divided between adaptation or resilience and the more aggressive mitigation and reduction methods. Republicans recognized the political calculus needed to establish their own climate agenda. The major themes of their plans include carbon capturing, minimizing plastic waste, natural gas exportation, and a broadly defined ‘free market’ approach.41 At the end of 2020, Senators Murkowski (R-AK) and Manchin (D-WV) passed the Energy Act42 embedded in the annual appropriations bill which scaled up the Department of Energy’s research and development programs around advanced nuclear and geothermal power technologies and long duration energy storage.43

There is a Republican insistence that a fossil fuel economy is not the enemy of the climate but that overall emissions must be reduced.44 Similarly, the party draws

skepticism as to whether there is currently functioning infrastructure available to make a full clean energy transition, despite large scale power grid modernization efforts occurring across the country.\textsuperscript{45} The same leading Republicans who spent the last decade denying that oil, gas, and coal emissions were to blame for rising temperatures are now in support of considering nuclear energy as an alternative energy source despite its known cost and safety complications compared to the more sustainable, expeditious, and available resources like wind and solar.\textsuperscript{46} Both Democrats and Republicans alike have supported nuclear energy as an alternative, however, it has received criticisms for safety concerns that other renewable sources have not. Despite the new and slow conservative climate change recognition this has not “translated into support for the one strategy that scientists said…[are] imperative to avert an even more harrowing future: stop burning fossil fuels”.\textsuperscript{47} Conservatives, like the DoD would like to continue to rely on and be supported by the fossil fuel industry while adapting to the harsh weather conditions and sea level changes of the climate crisis as opposed to implement mitigation measures that meet the UN temperature concerns outlined at the COP26 in October 2021.\textsuperscript{48}

Despite slow movement by conservative legislators, organizations like republicEn\textsuperscript{49} propose a three-fold approach to the climate crisis: “regulate emissions,

incentivize new technology, or price the negative effects of burning fossil fuels,” all of which are not entirely outside the realm of desires outlined in the Progressive wing of the Democrats’ Green New Deal. The difference is in implementation, like most conservative groups, republicEn is against the use of ‘big government’ for problem solving and prefers a market response to the climate crisis.

By comparison, Democratic Senator Ed Markey and U.S. Representative Alexandria Ocasio-Cortez introduced the Green New Deal legislation in 2019 which would embed social and economic reforms into an American climate response taking on a more wholistic approach to the crisis harkening back to President Franklin D. Roosevelt’s New Deal response to the Great Depression. The Green New Deal is, like Republican led initiatives, concerned with greenhouse gas emissions. However, the deal is far less broad in its definition as it calls directly on the federal government to wean its usage from fossil fuels—including the Department of Defense. Again, like Republicans in support of a climate agenda, the Green New Deal would like to leverage the economy as a means of tackling the crisis. However, where the two differ is Democrats, Progressives more specifically, also call for a need to tackle the income inequality, racial discrimination, and poverty they claim stems as indirect results of the climate crisis, not merely the technological feat needed to address rising temperatures, coastal changes, and dramatic weather events.

‘National Security’ as a Unifying Narrative

Where the two parties share a potential interest in not only adaptation but mitigation to the threat of climate change is its role in national security. Michael T. Klare
outlines in his book *All Hell Breaking Loose: The Pentagon’s Perspective on Climate Change* concrete examples of how much of an impending threat global warming poses on national security. In his book, Klare outlines an exchange in 2013 between members of the Senate Armed Services Committee and Admiral Samuel J. Locklear, a forty-year veteran and the senior commander for INDOPACOM in the Pacific theater. Both the senators on committee and Admiral Locklear had shared national security concerns relating to the rapid modernization of the Chinese military, Russian cyberwarfare development, and North Korean nuclear proliferation. However, when Admiral Locklear closed his comments with a foot-stomp on the DoDs concerns about global warming’s effect on national security, several senators balked at, argued with, glossed over, or ignored his warnings.

Global warming is an unconventional threat to national security dealing its heaviest blows over likely long-term circumstances resulting from resource scarcity, population growth, and continuing military and civil conflicts. Locklear declared, “increasingly severe weather patterns and rising sea levels threaten lives and property and could even threaten the loss of entire low-lying nations”. When Senator Inhofe, an Oklahoma Republican with close ties to the oil and gas industry challenged Locklear dismissing global warming as a ‘hoax’, Locklear doubled down asserting that “the biggest long-term security threat in the Pacific region is climate change”. Admiral

50 Klare, Michael T. *All Hell Breaking Loose: The Pentagon’s Perspective on Climate Change*. PICADOR, 2020. 16.
Locklear would go on to echo his remarks from a *Boston Globe* interview a month prior stating “global warming would come to exert an ever-increasing influence on security conditions in the Asia-Pacific region” as of the several billion people living there “80% of them live within 200 miles of the coast, and that trend is increasing as people move towards the economic centers which are near the ports and facilities that support globalization”.

The insistence Admiral Locklear showed Senator Inhofe in their exchange demonstrated a blur between military-political interests. Klare observed “it exemplified the clash of cultures between the political elite, who can say just about anything as long as they keep winning elections, and the military leadership who are totally loyal to the chain of command and rarely speak out of turn unless they are absolutely certain of the facts”. Because of the politicization of scientific fact, this exchange exposed differences in perceptions of reality. Senator Inhofe viewed global warming as a ‘hoax’ and making counterpoints an opportunity for political gain amongst his agreeable base and fossil fuel industry backing. Admiral Locklear, saw global warming as not a partisan opinion for which he was stepping outside of his expected apolitical role, but as “an observable reality, with significant and deeply worrisome implications for national security”.

Traditionally, military professionals are expected to espouse recommendations based on their strategic defense expertise and not comment on hot political topics. However, based

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55 Ibid.
on that hearing in 2013, it was clear that Locklear “had come to view climate change as an issue that had become relevant to his professional responsibility”\(^{56}\) as its cascading impacts would affect his ability to meet the military’s overall goal of national defense.

These cascading impacts are now referred to as *threat multipliers* after a publication titled *National Security and the Threat of Climate Change* was released in 2007 by the Pentagon-funded thinktank CNA Corporation. In their report they note that “many governments…are already on edge in terms of their ability to provide basic needs: food, water, shelter, and stability” and that “projected climate change will exacerbate the problems in these regions and add to the problems of effective government [because of this] climate change acts as a threat multiplier for instability in some of the most volatile regions of the world”.\(^{57}\) CNA’s warnings are not just relevant to the developing world but threaten the U.S. itself. As drought and food scarcity plague underdeveloped countries, there are projected increases in mass migrations and climate related pandemics which will mount pressure on developed countries to accept refugees which may pose national security, infrastructure, and health risks to the American population.\(^{58}\) CNA’s warnings were published in 2019 mere months before the global outbreak of COVID-19 origination from one of Admiral Locklear’s high threat countries of concern.

Klare uses a military analysis term ‘ladder of escalation’ used during the Cold War to describe the layered role the U.S. military is predicted to play in the ‘increasingly

\(^{56}\) Ibid.


\(^{58}\) Ibid.
intense and destructive stages\textsuperscript{59} of climate conflict. From the low end of the ladder would first be disaster relief as the DoD is called upon to aid in domestic or international relief from weather phenomenon. Next would come extended operations in regions facing potential state collapse. Followed by full military deployments spanning multiple countries due to climate shock of minor resource or energy supply. Then involvement in state disputes is likely due to conflict over water and major resource scarcity. And lastly on the ladder of escalation, military capabilities turned inward to help manage catastrophic climate disasters impacting the U.S. directly.\textsuperscript{60} To prevent this escalation, it bears asking what role the military has in adapting their practices to a warmer and more volatile climate as well as mitigating their bearing on global warming.

**Adaptation vs Mitigation**

In response to the climate crisis there are two approaches: adaptation and resilience to climate changes and mitigation to lessen the impact on the environment. Mitigation measures imply active steps to slow global warming by reducing greenhouse gas (GHG) emissions from the military. This contrasts with adaptation and resiliency efforts that intend to build around the reality of the climate crisis as opposed to minimizing one’s impact on climate change.\textsuperscript{61} These two approaches have become politicized. Republican leaders taking the more conservative approach with deference to the fossil fuel industry by recommending we merely adapt to our changing environment, denying human impact on global warming, and preferring to establish smaller more

\textsuperscript{59} Klare, Michael T. *All Hell Breaking Loose: The Pentagon's Perspective on Climate Change*. PICADOR, 2020. 29.

\textsuperscript{60} Ibid, 30.

\textsuperscript{61} Ibid, 207.
incremental resiliency measures over a longer period. Democrats, more specifically the further left side of their party, feel a stronger sense of urgency, taking heed to UN climatologists that state we need large force global mitigation efforts to not only reduce carbon dioxide emissions but attempt to eliminate them altogether in mere decades.

President Obama issued a series of Executive Orders during both of his terms to direct his agencies, including the Department of Defense, on expected planning and preparedness measures needed for future environmental sustainability. The first of which was EO 13514 signed in October 2009 making the reduction of GHG a priority of federal agencies.62 This was later superseded by EO 13653 in November 2013 that gave name to the climate crisis and tasked federal agencies, including DoD, with taking the resilience approach by better managing lands and waters and identifying information and data sources to aid in climate change preparedness.63 Then, in February 2015, Obama signed EO 13693 which built on his previous EOs by giving measurable and direct mitigation benchmarks for federal agencies to meet. Following the 2015 EO the DoD was given a clear directive to ensure both 25% of their total energy consumption came from clean sources and to reduce GHG emissions by 30% by 2025.64

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Pentagon’s Past Climate Responses

Following the Obama administration’s Executive Order identifying a need to address the climate crisis, the Pentagon implemented changes to military infrastructure and operations that dampened their impact on the environment while prioritizing national security. This was seen in the launch of the U.S. Navy’s Great Green Fleet under Secretary of the Navy Ray Mabus in the 2010s. In 2012, a C-2A Greyhound attached to the Carrier Air Wing on board the USS Nimitz completed the first carrier landing by an aircraft with alternative fueling blending a mixture of algae and cooking oil. The rest of the 71 aircraft in the air wing including FA-18 Super Hornet jets then followed suit burning 40% less emissions than standard flight operations on board an aircraft carrier. Similarly, in 2016, Mabus and the Secretary of Agriculture, Tom Vilsack, helped launch the first U.S. combat group powered by partially alternative fueling when the USS Stockdale departed NAS North Island, CA with the USS John C. Stennis strike group burning a mixture of petroleum and liquified beef fat from midwestern farmers.

This foray into alternative energy sources, however, was not intended to address the climate but to abate national security threats. As Mabus conducted his research he was met with Congressional requirements to prove alternatives were similarly cost effective as the more environmentally harmful fossil fuel technology. Mabus clarified at the Stockdale departure that “we need an American home-grown source of alternative energy…that is not subject to the wild price swings of conventional fuel…[and] can’t be

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66 Ibid.
67 Klare, Michael T. All Hell Breaking Loose: The Pentagon’s Perspective on Climate Change. PICADOR, 2020. 204.
used against us”.

It is important to remember though, that the primary objective of the Great Green Fleet was to establish combat, strategic, and force protection advantages, it is geopolitical in nature as Mabus and the DoD set to demonstrate global leadership in naval technology, not to abate the climate crisis.

Despite Mabus’s careful framing of Navy efforts to be viewed as “military preparedness measures and not environmental stewardship” the politicization of a climate agenda met its expected dead end in the Trump administration. Under EO 13834 from March 2017, President Trump revoking the Obama 2015 executive order by setting a “broad” and “ambiguous” climate agenda that aimed to “unravel the red tape” for agencies to determine their own energy independent and efficient standards while promoting economic growth. In practice, however, the broad language allowed for the Council on Environmental Quality (CEQ) an interagency cohort that works with the Environmental Protection Agency (EPA) to maintain the status quo through most of the Trump administration. Trump may have removed the U.S. from the Paris Climate Accord and the forward motion and deadlines established in Obama’s 2015 EO were lost, but the


infrastructure and intentions were not forgotten by many agencies, including the Department of Defense.

Despite President Trump’s unclear personal stance on the reality of the climate crisis, often firing up his base with continuing climate denialism claims, the Republican party largely continued with their adaptation and resilience approach through his administration. The public political messaging of the GOP has been to distance themselves from supporting climate related agendas. However, agencies under the Trump administration slowly continued their work at diagnosing and adapting their impacts on the climate crisis, maintaining preventative mitigation measures recommended by the Obama administration despite lack of executive direction under Trump. Conversely, climatologists and Progressive Democrats agree that the pause on mitigation efforts through the Trump administration had adverse impacts on the UN’s deadlines for global emissions control.

**A New Green Military**

Within his first week in office President Biden signed EO 14008 ‘Tackling the Climate Crisis at Home and Abroad’ which called for putting the climate crisis at the center of U.S. foreign policy and national security by taking a government-wide approach to the climate crisis.\(^73\) In it, Biden recognizes the urgency to meet “net-zero global emissions by mid-century or before”. Agencies with extensive foreign policy or national security interests were ordered to submit an assessment of their internal and external

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climate impacts, risk mitigation plans, and international partner’s climate contributions within 90 days. The Secretary of Defense, in coordination with other relevant administrators, were tasked with producing a Climate Risk Analysis outlining the security implications of climate change due to the President within 120 days followed by annual reports beginning in January 2022 to updating CRA’s to the National Security Council.

Biden’s ‘government-wide’ approach took both adaptation and mitigation responses into consideration. His order reflected the need to bolster the government’s resilience to the impacts of the climate crisis as well as make changes that reduce emissions, hold climate polluters accountable, and implement clean energy technologies and infrastructure on a short-term goal line. To do so, Biden created a National Climate Task Force consisting of many members of his cabinet, including the Secretary of Defense. The first item billed to the Task Force was to “use the federal government’s buying power and real property and asset management” to set a financial example of prioritizing new climate commitments. Specifically, Section 210 of EO 14008 calls for “heads of agencies [to] identify opportunities for Federal funding to spur innovation, commercialization, and deployment of clean energy technologies and infrastructure…and then take steps to ensure that…[they] seek to prioritize such investments in the President’s budget request for FY22 and thereafter”. A later review of the newly approved DoD FY22 Budget will contradict these intentions.

74 Ibid.
75 Ibid.
76 Ibid.
On October 21, 2021, the White House releases a follow up fact sheet with the findings from each of the agencies’ executively directed analyses. The DoD Climate Risk Analysis (DCRA) describes how the DoD will “integrate climate considerations into strategic, planning, budget, and other key documents”77 agreeing that climate change poses a threat at every level of national security. Secretary of Defense Lloyd Austin promised a forthcoming outline of intentions in the National Defense Strategy which will complement the Climate Adaptation Plan. The intended focus is to ensure the DoD “can operate under changing climate conditions… [and will] prevent, mitigate, account for, and respond to defense and security risks associated with climate change”.78 The DoD also released an unclassified copy79 of the DCRA as was forwarded to the National Security Council in October 2021.

Conclusion

The response of the DCRA met the objectives set forth by Biden’s EO from early 2021, however, the requested DoD FY22 Budget did not reflect those same prioritizations. The Biden administration requested $715 billion for the DoD’s FY22 discretionary budget authority, making up 49% of all discretionary spending requested for FY22.80 On December 15, 2021, the Senate passed the FY22 budget allotting $768.2 billion.

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78 Ibid.


billion—a $25 billion or 2% increase from Biden’s original request—to the Department of Defense.\textsuperscript{81} In the Senate Armed Services Committee’s press release following the bipartisan budget passing, there was no mention of the climate commitment these funds would serve\textsuperscript{82} despite its prioritization in the budget overview released by the DoD Comptroller in May 2021.

The report overviewed the 2022 budget request in 148 pages, of which only one page detailed the line item for Tackling the Climate Crisis. Within the first two paragraphs of its introduction, the summary states climate change as a top concern for the DoD in deterring national security threats. The budget is broken into sections of concern: Defend the Nation, Innovate and Modernize, Maintain and Enhance Military Readiness, Take Care of Our People, Succeed Through Teamwork, Contingency Operations, and the DoD Audit.\textsuperscript{83}

‘Tackling the Climate Crisis’ is a chapter subsection of Innovate and Modernize, giving the perception of priority. Secretary Austin opens the single page remarks on the President’s top-line concern that “we face a growing climate crisis that is impacting our missions, plans, and capabilities and must be met by ambitious, immediate action” to then request only $617 million of a $768.2 billion budget to commit to such a formidable


threat. This commitment makes up only .08% of the overall approved budget. For context, the F-35 program alone, which is a sub-sub line item of overall air capabilities, requested $12 billion. Defense climate spending, a chaptered priority in the budget’s outline, equates to only 5.14% of the F-35 sub-sub-spending category.

Similarly, the Contingency Operations chapter sub-categorizes Overseas Contingency Operations (OCO) for base requirements. These are largely continuation funds instated by the G.W. Bush administration to address the Global War on Terror (GWOT). These funds have steadily decreased over the last decade as American presence in the Middle East has slowly prepared for withdrawal. Despite a reprioritization following a highly dynamic troop withdrawal from Afghanistan in August 2021, $3.3 billion has been allocated for Afghan Security Force (ASF) sustainment which is only part of the $42.1 billion in overall continuation funds. Again, by comparison, the ongoing climate commitment only equates to 18.7% of the sundowing ASF funds.

The DoD’s climate response is broken into both adaptation and mitigation tiers with an emphasis on adaptation measures. None of the $617 million requested for environmental planning is committed towards the emissions reduction intentions as outlined in Biden’s EO. The continuing defense for military hesitancy to prioritize mitigation measures is the assertion that doing so would undermine the DoD’s primary

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84 Ibid.
threat objectives in Great Power Competition with Russia and PRC. These concerns are coupled with the defense industries close ties to the fossil fuel industry.

For over a decade now, the DoD has acknowledged that not only does environmentally beneficial military technology exist, but it is also cost-competitive with fossil fuels.\(^8\) Even still, the military has been slow to adapt from resilience measures to mitigation measures. Propelling the military’s hesitancy to engage in mitigation efforts is the opinion that by doing so it drains resources and attention from the primary defense mission of the armed forces. Alternatively, by minimizing GHGs the DoD might eliminate likely future threats to national security that are so clearly coupled with the climate crisis. It is simply not enough to brace a force for impending threat, we must actively work to minimize the likelihood of that threat. GHG mitigation must be the primary investment of Pentagon to fully address the national security threat that the climate crisis poses to the United States.

As the U.S. military moves forward in their fight against global warming, the relationship between the Pentagon and the fossil fuel industry must be more closely reviewed. The DoD carries immense social and political capital at home and abroad. If they cannot commit to large scale budget promises that are geared toward the climate crisis, their strategic messaging capabilities should be used as tools for persuading public support for climate science. Absent of bipartisan public support, any legislation that takes bold progressive steps towards addressing the climate crisis are dead in the water. The military is an influential force in society and politics, armed with the largest federal

budget of any other national asset, and should take ownership and responsibility for not only its complicity in the furthering of the effects of global warming but its role in further preventing those effects.
Chapter 2

Climate Migration and National Security

The climate crisis requires a significant response in not only the mitigation and reduction of greenhouse gas emissions to prevent or abate mass environmental changes but also to lower the impact of its cascading effects on human life. Among the fallout, scientists have predicted the inevitable impacts of climate change to include environmental migration. The people affected by the climate crisis to a degree that would require relocation would become climate refugees, many seeking aid in western countries or more temperate climates.

Environmental migration may take different forms. We may see the displacement of peoples due to newly uninhabitable land because of catastrophic weather events such as flood or fire. As access to drinkable water continues to dwindle, its resource is expected to be at the center of what are known as ‘the water wars’. Conflicts and regional tensions are expected to rise due to depleting resources causing influxes of refugees.

The issue of environmental migration can be thought of from the perspective of humanitarian assistance, environmental stability, and national security. Each of these perspectives influences the governance of environmental migration. Following analysis of each perspective, this chapter will argue that the threat climate refugees play in U.S. national security has the greatest impact on governance of this issue. Environmental

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migration poses a threat to American political stability, national security, and the U.S. and international economy.

**Executive Response to Climate Migration**

On February 4, 2021, President Biden issued Executive Order 14013 on Rebuilding and Enhancing Programs to Resettle Refugees and Planning for the Impact of Climate Change on Migration. In Section 6 of the EO he tasked the National Security Advisor and a team of administrative officials with providing “a report on climate change and its impact on migration, including forced migration, internal displacement, and planned relocation”\(^{88}\) within 180 days. Biden specifically requested information relating to the security implications of these issues, as well as policy recommendations that the U.S. might implement to protect and aid those resettled due to negative impacts of climate change.

In response, Refugees International developed a task force to compile a report that would aid in the administration’s research in response to the president’s EO. The report produced by Refugees International between May and July 2021 highlighted the threat environmental stability and humanitarian assistance burdens will play as climate migration increases. The report then also provides several actionable recommendations to the Biden administration in response to the needs outlined in the EO.

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Environmental stability is the nexus between all other climate migration issues. The Refugees International report asserts that by the end of this century, global temperatures are expected to rise from 2.7°C to 3.1°C causing “disruptive and deadly events such as extreme heatwaves and precipitation” meaning “devastating and irreversible impacts on the ecosystems on which we depend, including large-scale ocean acidification and declining fishery stock, reduced quantity and reliability of renewable surface and groundwater, and mass extinction of flora and fauna.”89 Refugees International reports that 80% of the world’s poorest people live in rural areas that depend on agriculture for their livelihood, where ecosystem loss to environmental instability creates food and water insecurity.90

Changes to the environment do not only cause international migration but also lead to influxes in regional or internal human movement. The Internal Displacement Monitoring Centre (IMDC) released their Global Report on Internal Displacement (GRID) funded in part by the U.S. Agency for International Development91 for 2020 calculating those “weather-related disasters displaced more than 30 million people—three times more than those displaced by conflict in the same year”.92 These changes in


90 Ibid.


Habitability must be met with both a reduction in carbon emissions as well as targeted development policies. Without these, the World Bank predicts up to 143 million internally displaced climate refugees by 2050.\textsuperscript{93} However, the World Bank also claims that “if policies were enacted to cut carbon emissions and support a green transition—one with robust support for locally led climate change adaptation, stronger social safety nets, and more inclusive and equitable development policies—the total number of internal ‘climate migrants’ would decrease by up to 80 percent.”\textsuperscript{94}

The Refugees International report reminds that the United States is responsible for 397 gigatons of carbon dioxide emissions between 1750 and 2019, followed by China with nearly half at 214 gigatons CO\textsubscript{2}.\textsuperscript{95} Due in part to the role they have played in contributing to the threat of global warming and the threat mass climate migration would play on American national security, the United States has a responsibility to adopt comprehensive measures that safely ensure at-risk communities may cross borders with dignity and protection of their basic rights.

**National Security Predictions**

In his book *All Hell Breaking Loose*, Michael T. Klare reviews the Pentagon’s response to the climate crisis and outlines its many threats to national security. Klare is a professor of Peace and World Security with the Five Colleges liberal arts institutions, a


\textsuperscript{95} Ibid.
frequent correspondent for *The Nation* and *Mother Jones*, and has a PhD in U.S. defense policy and world security affairs. Mass migration is one of a few concerns among Klare’s analysis including warnings of civil disorder, resource scarcity, ethnic strife, government collapse, food shortages, energy crises, military facility vulnerabilities, and global pandemics. Klare refers to mass migration, pandemics, food scarcity, and energy crises as forms of “global shockwaves” that may begin in weak states or developing countries but ripple in effect to major power states causing state collapse and “increasing the likelihood of foreign wars and humanitarian disasters—any of which could result in U.S. military action of one sort or another”.96 Though these crises have occurred throughout human history and many are at all-time lows, Klare’s alarmism mainly attributes the impact of climate change as primarily an aggravating factor, not the sole cause.

As early as 2007, the Center for Naval Analyses Corporation warned that extreme climate changes “can fuel migrations in less developed countries, and these migrations can lead to international political conflict” 97 and that “the greatest climate-related threat to American security—other than its direct impacts on the U.S. homeland itself—would arise from the migratory implications of climate disasters occurring in nearby countries, especially in Central America and the Caribbean.”98 This influx of climate refugees from the global south would be exceedingly disruptive and likely call for military involvement.

There are very few opposing views on whether climate changes will result in mass migration. Opinion pieces in *The Geographical* and *EU Observer* claim that

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97 Ibid, 112.
98 Ibid, 115.
warnings of mass migration are merely alarmist and predictive. Their estimation is that large scale weather events due to global warming will not necessarily cause international migration but that displaced peoples will migrate regionally or attempt to remain local and adapt to their new weather realities. It is difficult, however, to find any opposing views that the climate crisis will not cause some form of human movement. If it is the difference between the doomsday 150 million displacement warnings and a more conservative “only tens of millions” the truth remains: people will be forced to move, in some form, and for some distance, due to changes in the climate.

Present Reality

Environmental migration is not only a prediction but a present reality. Abrahm Lustgarten, a senior environmental reporter at ProPublica partnered with The New York Times Magazine and the Pulitzer Center to write a three-part series on how climate change is leading to population shifts in Central America and Mexico and “how people may move across borders between these countries and to the United States”. For the reporting, the Pulitzer Center hired geographers to build climate migration models that accounted for different socioeconomic and climate scenarios including border management, GDP growth, trade, and atmospheric global carbon concentrations. Their models included five versions from optimistic, moderate, pessimistic, climate-friendly,

Lustgarten followed a Guatemalan farmer named Jorge who in 2019 was forced to move north after five years of drought and a sudden flood decimated his corn crops and made his home region unlivable due to both food and income scarcity. Jorge was one of hundreds of thousands of Guatemalan migrants forced with making the decision to relocate. These formerly semiarid parts of Guatemala are projected to become like deserts as replenished waters and rainfall are set to drop by as much as 83% by 2070. Throughout human history, the largest concentrations of agricultural people have lived between a very narrow sets of temperatures, and as populations grow and temperatures rise, between 1 and 3 billion people are “projected to be left outside the climate conditions that have served humanity” more in the next 50 years than in the last 6,000 years combined.

In Southeast Asia, longer monsoon seasons and higher rainfalls have made farming increasingly difficult leading more than 8 million people to relocate toward the Middle East, Europe, and North America. In the models developed by ProPublica for pieces, Lustgarten noted that policies responding to


\[103\] Ibid.


immigration and climate change reduce the overall number of projected climate refugees by 2050 from upwards of 2 million to 680,000.\textsuperscript{106} Political responses by the host nation can create drastically different climate migration futures for Central America, Mexico, and the United States.

The concern is not if climate refugees will move but when they do what impact will their movement have on the countries bearing the weight of their arrival. Climate migration itself may not be the sole threat to host nation operations, but the cascading effects of moving people like overcrowding, civil unrest, cultural clashes, or increased cost of services\textsuperscript{107} are all indicators of more vulnerable breeding grounds for U.S. national security issues.

**Military Readiness**

In a 2014 address to the Senate Armed Services Committee, General John F. Kelly Commander U.S. Southern Command emphasized “we regularly exercise our rapid response capabilities in a variety of scenarios, including responding to a natural disaster, mass migration event, an attack on the Panama Canal, or evacuating American citizens”\textsuperscript{108}. In 2013 SOUTHCOM conducted the INTEGRATED ADVANCE exercise which established a Joint Task Force—Migrant Operations (JTF-MIGOPS) at Naval Station Guantanamo Bay to simulate coordinated interagency response to a mass migration event in the Caribbean or Central America. This simulation allowed


SOUTHCOM to “flesh out some of the processes and resources we would need if a mass migration were to occur.”\textsuperscript{109} The simulation assumed a series of mass hurricanes required U.S. forces to interdict and repatriate migrants at sea “stopping migrant-laden ships…and transporting the migrants to the U.S. Navy base at Guantanamo, where they would be detained in giant tent camps until they can be ferried back to their home country.”\textsuperscript{110} SOUTHCOM conducted the same exercise at Fort Sam Houston in San Antonio, TX two years later focused on mass migration from Mexico and Central America following state collapse and food insecurity where the goal was for military forces to practice doing “whatever might be needed to prevent large numbers of disaster-driven refugees from gaining access to U.S. territory.”\textsuperscript{111}

These global shockwaves do not just increase the likelihood of U.S. military involvement but have cascading impacts on the economy. Because the American economy “is so closely linked to those of its major trading partners, any major economic disruption abroad will inevitably hurt business at home.”\textsuperscript{112} Due to the world’s increased reliance on global networks for essential goods and services, any breakdown in that chain would flow into U.S. economic stability.

Within the U.S. climate migration is already occurring. Following catastrophic hurricanes, families who spent decades residing in LaFourche Parish, LA have had to

\textsuperscript{109} Klare, Michael T. \textit{All Hell Breaking Loose: The Pentagon's Perspective on Climate Change}. PICADOR, 2020. 116.
\textsuperscript{110} Ibid.
\textsuperscript{111} Ibid.
\textsuperscript{112} Ibid, 118.
vacate their homes for higher land\textsuperscript{113}, many losing real estate to flooding leaving the parish to invest in resilient housing prototypes.\textsuperscript{114} Mitigating environmental impact as well as adapting infrastructure to the changing climate would reduce the amount of climate refugees to a more manageable rate. In 2006, Dr. Robert J. Nicholls, a professor of coastal engineering at the University of Southampton, conducted a cost benefit analysis of mitigation and adaptation investment. Nicholls’s found that “widespread protection will be an economically rational response to land loss due to sea-level rise”\textsuperscript{115} which will result in human societies responding to these environmental changes. Nicholls also stated concern that “a reactive rather than proactive approach to adaptation” could fail to address the impact of rising sea levels.\textsuperscript{116}

Similarly, should we fail to meet the mark of reducing our carbon emissions and adapting to catastrophic weather events that lead to mass human movement, the United States must be better prepared to receive international climate refugees in a manner that maintains both their human dignity as well as preserves national security. In agreement with Klare’s analysis, viewing climate migration from the perspective of a threat to national security is also more likely to gain public, political, and military responsiveness at a better, more impactful, and actionable level.


\textsuperscript{116} Ibid.
Wheat Shortages and the Arab Spring

Changes in the climate have adverse effects on rural access to water and food resources, lead to the need for large scale humanitarian assistance and response and threaten the overall stability of an environment. Although these outcomes are concerning on their own, the threat these changes can have to U.S. national security and domestic political stability are of primary concern. Partisan responsiveness to climate change has differed over even the acknowledgement of the reality of global warming. Internal displacement due to environmental factors no longer has an isolated effect on less developed regions. Even in stable regions of the world, increased dangers from climate migration will cause “the U.S. and Europe [to] experience mounting pressure to accept large numbers of immigrant and refugee populations as drought increases and food production declines in Latin America and Africa”.¹¹⁷ The threat global warming poses on national security, as evidenced through increases in environmental migration, should be a leading narrative of U.S. policy response to the climate crisis.

There is precedent for global warming affecting political stability and security abroad. In May of 2010 there was a spike in temperatures throughout Russia reaching 25°F above normal which led to a series of cascading events. These increased temperatures resulted in thousands of wildfires, grounded flights, and even caused Russian military officials to move explosives from installations in Moscow that were

vulnerable to the fires.\textsuperscript{118} The fires displaced over 100,000 Russians on or below the poverty line and killed over 5,000 due to smoke-inhalation.\textsuperscript{119} The wildfires also decimated over 20% of Russian wheat production, and left farmers to slaughter livestock to meet feed requirements.\textsuperscript{120} The overall cost was estimated in the billions.

In response, Prime Minister Putin banned grain exports from Russia, halting trains at the border and rerouting them internally. What followed was an international price spike on grain that impacted other countries in the form of food shortages. Klare refers to the combination of other destabilizing factors such as “income inequality, high youth unemployment, and governmental corruption” as contributors to a global shockwave that brings the impacts of a regional weather phenomenon to the international market.

Even so, NASA’s Goddard Institute for Space Studies and Columbia University’s Earth Institute acknowledged that specifically in 2010 “the extreme summer climate anomalies” had to be “a consequence of global warming”.\textsuperscript{121} The Russian fires were not the only impact to global grain production. Higher than normal rains in Canada washed away topsoil grain seeds reducing production by 35%, similar monsoons in Pakistan reduced their usable land by one fifth, as well as Australian and Chinese droughts limiting usable grain harvests.\textsuperscript{122} By mid-August 2010, the Russian grain ban caused

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\textsuperscript{119} Klare, Michael T. All Hell Breaking Loose: The Pentagon's Perspective on Climate Change. PICADOR, 2020. 92.


\textsuperscript{122} Klare, Michael T. All Hell Breaking Loose: The Pentagon's Perspective on Climate Change. PICADOR, 2020. 93.
\end{flushleft}
prices to soar and devastated poorer Middle Eastern and African (MENA) countries more reliant on imports.\textsuperscript{123}

In Mozambique, the price of bread went up by 30\% after the government eliminated food subsidies. The capital city of Maputo erupted in violent protests and civic unrest killing a dozen people before the government reinstated their food subsidies.\textsuperscript{124} A 2009 World Bank study noted that “Arab countries are more exposed than other countries to severe swings in agricultural commodity prices, and their vulnerability will probably be exacerbated in coming years by strong population growth, low agricultural productivity, and their dependence on global commodities markets.”\textsuperscript{125}

By December 2010 global wheat prices were 90\% higher than they had been at the start of the year. The poor in the MENA countries led by authoritarian regimes joined Mozambique in their outrage in forms of public protest. In Tunisia, a street vendor lit himself on fire after government officials took over his vegetable cart; in Egypt, large crowds gathered in Tahrir Square in Cairo met by paramilitary forces; and floods of people joined in protest across Jordan, Libya, and other MENA nations.\textsuperscript{126} Their collective protests exposed numerous grievances against the rigid political institutions


\textsuperscript{126} Klare, Michael T. \textit{All Hell Breaking Loose: The Pentagon's Perspective on Climate Change}. PICADOR, 2020. 95.
they inhabited. Protestors were seen waving loaves of bread as symbols of their resistance to the food crises in their countries.\textsuperscript{127}

This mass demonstration became known as the Arab Spring, “a wave of revolutionary fervor [that] permanently altered the political landscape [of the region] and created a host of new security challenges for the United States”.\textsuperscript{128} In Egypt there were a series of regime changes that had varying opinions of the U.S; in Libya, Mu’ammar Gadhafi was overthrown sparking militant infighting for control by al-Qaeda and ISIL; and in Syria, a civil war began in opposition to the al Assad regime. These events “opened fresh opportunities for the expansion of terrorist organizations and produced vast waves of human migration.”\textsuperscript{129}

The Arab Spring was an example of how global warming could pose a new kind of security threat that did not originate from a single isolated weather event, but instead a shock wave of compound events across the planet. Global warming most directly impacts environmental stability through changes in temperature, catastrophic weather events, or mass pandemics. But it is the indirect and cascading impacts on the global system that will be most observable and felt on the national security stage. Environmental stability is the ‘what’, whereas national security is ‘why’ we should care.

The conflicts of the Arab Spring were not based solely on political or anti-regime sentiments. Even if a country is on the brink of civil unrest due to already established


\textsuperscript{128} Klare, Michael T. \textit{All Hell Breaking Loose: The Pentagon's Perspective on Climate Change}. PICADOR, 2020. 96.

\textsuperscript{129} Ibid.
issues amongst their people, climate related global shockwaves like the heat spike in 2010 that decimated the international wheat market becomes the breaking point. Avoiding breaches of these limits are precisely the concerns of U.S. national security officials. If we knew that a certain private business deal would have cascading negative effects on sectors of the American economy, it would be in our interest to prevent that deal. If we knew that a change of power in a foreign country could lead to hostile or threatening tensions towards the U.S., it would be in our interest to support the opposing power and prevent that transition. There are tipping points or indicators that bring scenarios from merely vulnerable to catastrophic. Mitigating and abating the effects of the climate crisis on U.S. national security should be as concerning as the vulnerable economies and regimes that typically receive high effort and attention but would only be exacerbated by a global warming shockwave.

These international conflicts, though distant, do play a role in U.S. national security by way of mass migration. In the case of Jorge from Lustgarten’s piece in The New York Times Magazine, “climate changes, drought, and food insecurity drive rural residents in Mexico and Central America out of the countryside where millions seek relief, first in big cities spurring rapid and increasingly overwhelming urbanization.”

From there, people in overwhelmed Central American and Mexican cities flow north to the United States posing a direct immigration and national security burden on American borders. This movement is not unique to countries on the border of the U.S., however.

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And the threat of climate migration on U.S. national security is not sole to Central and South American immigrants.

In Egypt, 50% of calories consumed originate from outside their borders. In the late 2000’s, following wheat crop devastation due to global warming heat waves, “bread riots” and “a combination of shrinking farmlands, weather, and poor water allocation [helped] contribute to higher wheat prices and, in turn, anti-government sentiment” serving as the catalyst of the Arab Spring. The Syrian war became one of the more complex outcomes to emerge from the Arab Spring protests.

Global Shockwaves and Syrian Refugee Crisis

In 2011, ignited by the pro-democracy civil unrest from their neighboring countries due to climate sparked food insecurity, hundreds of thousands of Syrians took to the streets to protest the Assad regime. By 2012, Syrians were embattled with a full-scale civil war between rebel brigades and the Assad government backed by Hezbollah and the Iranian Revolutionary Guard Corps (IRGC). The anti-government opposition groups were later eclipsed by the formation of ISIL, or the Islamic State of Iraq and Syria/Levant, set to take advantage of the unrest and find local Syrian sympathizers to

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establish an Islamic state and changing the course of the conflict altogether. It was then, in September 2014, when U.S. forces began attacks against ISIL in Syria.

Aggravated by Russian involvement with the Assad regime, including air strikes against the rebel factions, the government retook substantial portions of the country between 2017 and 2018. Diplomacy efforts by the U.S. and UN were repeatedly deadlocked making the Syrian war “the largest humanitarian crisis since the end of World War II”. There is a clear line that can be drawn from the climate shockwaves of 2010 to the “millions of refugees that poured into Turkey, Jordan, Lebanon, and even Iraq and Egypt as well as several European countries and the U.S., where the refugee crisis redefined the political landscape”.

It is not to say that global warming is the sole cause of migration but that it serves as an aggravating factor to the cascading effects that follow catastrophic weather events. Civil unrest occurs independent from climate related events, but an uptick in water or food scarcity due to global warming will turn improbable vulnerabilities to certain crisis events. The BBC defines these as relocation ‘push factors’ including fewer jobs, war, famine, or natural disasters. Similarly, ‘pull factors’ in host nations include better health care, job opportunities, education, and safety.

Due to hundreds of billions of dollars in destruction of homes, businesses, roads, hospitals, schools, and infrastructure “more than half of Syria’s population was displaced

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134 Ibid.
135 Ibid.
and dependent on humanitarian aid for daily subsistence”.137 Between January 2014 and October 2016, the United States admitted 15,583 Syrian refugees.138 During this time, President Trump called for ‘extreme vetting’ and claimed that many refugees were ‘compromised by terrorism’.139 While refugees provide the host country with a richer and more diverse culture or reductions on any labor shortages in low paid or ‘low skilled’ jobs, mass influxes do also impact national security. Like Lustgarten found with his modeling in *The New York Times Magazine* pieces, to abate and mitigate the impact climate migrants have on a host nation, they must be prepared to establish policies that address both global warming and large-scale immigration.

**Conclusion**

To protect the security of the state we do not have to violate the security of humans. People do not leave their homes unless faced with serious threats to their life or liberty. It is a false assumption that someone fleeing an inhabitable space is necessarily tied with terrorist organizations or has malicious intent towards their host nation. National security is not limited to security from terrorism or the protection against military attack of the state. National security includes evaluations of non-military vulnerabilities like food, energy, economic, or environmental security. A failed response to any one of these areas opens a country to national insecurities.


139 Ibid.
To say that immigrants pose a national security threat is not to call immigrants terrorists or victim blame those seeking refuge from war, famine, or natural disaster. However, climate migrants arriving in new regions have the potential to shock the economy and labor force, test the limits of food and energy consumption due to overpopulation, or add political and social stress to an unwelcoming community. These are the national security threats large scale migration from the global south into the United States due to climate related displacement that should be at the forefront of immigration and environmental policy development as we move further into the climate crisis.

How the U.S. receives immigrants is fraught with political division with responses ranging from open borders to kids in cages. These sentiments will not prevent the influx of people over the coming decades. The U.S. Census Bureau has noted that independent of climate related migration, the U.S. expects to see a net of 1.1 million immigrants annually.\textsuperscript{140} Under a series of alternative models, that number is projected to increase by anywhere between 50\% to double if compounded with global shockwave simultaneous catastrophic weather events.\textsuperscript{141} As immigration numbers under any model continue to reach historic highs, how the U.S. inevitably receives these people and responds to the threat they pose to national security will determine the level of impact climate migration has on Americans and refugees alike.


President Biden’s Executive Order on Rebuilding and Enhancing Programs to Resettle Refugees and Planning for the Impact of Climate Change on Migration tasked the National Security Advisor to outline the security impacts of climate migration and propose policy recommendations that would minimize those impacts. In response to the EO, Refugees International’s report compiled prevention, protection, and mitigation suggestions to the Biden Task Force.

Refugees International recommended that “the U.S. focus on lowering the impact of natural disasters on communities and investing in climate change adaptation, as well as adopting new resettlement, visa, and coordination policies to protect people who will be displaced”. By recognizing that climate migrants fall within the definitions set forth by the 1951 Refugee Convention, the U.S. will make claims for international protection stronger for climate refugees. The report also calls for pathways to citizenship and strengthening of Temporary Protected Status (TPS) and Deferred Enforced Departure (DED) statuses for those labeled as climate migrants. Outside of recommendations that reinforce immigration policies, the report warns the Biden administration should “substantially increase their commitment of $2.5 billion for international climate change programming and focus that increase in large measure on climate change adaptation” and mitigation.143


If acted upon, these recommendations could lead to border asylum protections and established relocation initiatives designed specifically for climate migrants. Investments in programs designed to reduce carbon emissions and abate further global warming caused weather events could help to slow the number of expected immigrants. Similarly, establishing green jobs initiatives could help absorb the influx of labor migration and propel industries working to adapt to sustainable energy practices.

The climate crisis is not a future problem that requires future solutions. Climate migration is happening now. Changes in global temperatures do not merely threaten environmental stability. As catastrophic weather events hit people across the globe, a daisy chain of events follows—from decimated crops or natural resources to price surges on goods, or food insecurity and famine to political upheaval and war. In response comes the mass migration of people looking to live their lives safely and with dignity. These global shockwaves threaten U.S. national security. If not out of concern for the physical environment, policy measures must be put in place to protect the economic, energy, and political security of the U.S. from the cascading effects of climate migration.
Chapter 3

Blue New Deal and Great Power Competition

Oceans make up 70 percent of the Earth’s surface, the U.S. has over 95,000 miles of shoreline\textsuperscript{144}, and over 40% percent of Americans live in coastal cities.\textsuperscript{145} The nation’s coastal commerce is so large that if these “counties were an individual country, it would rank third in the world in gross domestic product, surpassed only by the U.S. and China.”\textsuperscript{146} As we proceed into the next phases of addressing the impact of global warming on our climate, we must account for the bearing these decisions will have on our oceans and the blue planet.

The United States is one of the few countries with a functioning “Blue Water Navy,” allowing for sustained operations across the deep-water ocean. In short, the U.S. Navy can go anywhere and is everywhere. As the U.S. finds itself in a new era of Great Power Competition with the People’s Republic of China (PRC) and Russia, key features of national security and the economic landscape are doubly threatened by not only state actors but swift changes in our ocean makeup and coastal outlines.

This chapter will address the future of climate legislation from the perspective of its impact on the blue economy as seen by the defense industry. First, it will review the new Progressive proposal for a Blue New Deal as a solution for the impact climate

\textsuperscript{146} Ibid.
change has on the blue economy. This chapter will then highlight the impact that global warming is having on polar ice caps and the cascading effect rising sea levels have on new open water horizons and national security interests. Lastly, this chapter will review how these progressive proposals could impact the national security goals of the U.S. Navy and the Department of Defense as the Great Power Competition mission evolves in relation to ocean changes and pursuit of alternative energy solutions in defense spaces.

**Senator Warren’s Blue New Deal**

In the fall of 2019 during her campaign for president, Senator Elizabeth Warren (D-MA) announced a plan for a Blue New Deal. In developing her plan, Senator Warren consulted Dr. Ayana Elizabeth Johnson, a marine biologist with a PhD from Scripps Institution of Oceanography. Dr. Johnson has taught at NYU, developed policy at the EPA and NOAA, as well as co-founded the Urban Ocean Lab and the All We Can Save projects focused on coastal cities and climate solutions. With the help of Dr. Johnson, Senator Warren published a plan that addressed the need for climate legislation to include focused plans that addressed ocean landscapes.

The Blue New Deal builds upon the more land-based focus of the Green New Deal proposed by Progressive Democrats Senator Ed Markey (D-MA) and Congresswoman Alexandria Ocasio-Cortez (D-NY). The plan outlined three key objectives: to “rebuild our blue economy, protect and restore ocean habitat, and adapt in a

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climate changed world”.\textsuperscript{149} To rebuild a blue economy, Warren planned to expand offshore renewable energy, build climate-ready fisheries, expand community-based seafood markets, invest in regenerative ocean farming, and build climate smart ports. To protect and restore ocean habitats, Warren planned to restore marine ecosystems, expand marine protected areas, invest in marine carbon sequestration, end offshore drilling, reduce ocean trash, hold Big Agriculture accountable for upstream pollution, and implement collective management of our international waters. And, to adapt to changes in sea climate, Warren planned to invest heavily in FEMA’s Pre-Disaster Mitigation grant program, implement a Post-Disaster Mitigation plan that centered environmental justice concerns, reform the National Flood Insurance Program, improve management for droughts via the U.S. Geographical Survey, and invest in a Great Lakes Restoration Initiative protecting fresh waters.\textsuperscript{150}

**Global Warming Ocean Impact**

Each of these measures are in response to the effects of sharp rises in ocean temperature. Due to human activity, the increase in carbon emissions has resulted in trapped gas within the earth’s atmosphere causing a greenhouse effect. These greenhouse gases cause the Earth’s climate system to have an energy imbalance as these rising concentrations heat the atmosphere. Our oceans absorb 93\% of that heat, raising the ocean heat content (OHC) to a point that “has contributed to increases in rainfall


\textsuperscript{150} Ibid.
intensity, rising sea levels, the destruction of coral reefs, declining ocean oxygen levels, and declines in ice sheets; glaciers; and ice caps in the polar regions.”

Over 30% of the carbon dioxide trapped in the earth’s atmosphere is absorbed by the oceans. Increases in CO₂ change the pH levels of ocean waters making them more acidic. NOAA warns of the damages this has on the life of marine species and the cascading impact these declining fish stock will have on the economy. In a 2022 Marine Economy Report on the U.S. Ocean and Great Lakes Economy, NOAA noted that ocean tourism and recreation alone contributed more than $304 billion in GDP, making it one of the highest of all economic sectors. This excludes shipping and ocean agriculture which have outpaced all other industries making up $14.5 trillion globally. The marine economy in 2018 alone grew faster than the U.S.’s economy as a whole with a 5.8% single year increase. In June 2020, retired Navy Rear Admiral Tim Gallauded, Ph.D., Assistant Secretary for Commerce and Oceans and Atmosphere and Deputy NOAA Administrator commented that “these statistics are the first-of-its-kind estimate of the U.S. marine economy, a primary driver of jobs, innovation, and economic growth…data such as these provide a critical baseline to inform, track progress, and accelerate

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America’s economic recovery.” Similarly, changes in supply will have a large impact on this growing industry.

The combination of changes in temperature and acidification are causing fish and water wildlife to struggle to survive in their normal habitats or at all. An article by Ben Goldfarb in E360, Yale University’s magazine on global environmental issues, lists countless examples of changes in fish migration patterns due to ocean warming and acidification. From fishermen in Portugal who have caught over 20 new species from warmer tropical climates off their coasts to Chinook salmon making their way to Arctic riverways from their home between Northern California and the Gulf of Alaska. A 2019 United Nations’ IPCC report on oceans and climate change calculated that since the 1950s, marine species are moving towards the poles in search of cooler waters at a rate of 32 miles per decade.

Blue Economy

The Blue New Deal’s goal to rebuild a blue economy focuses on investments in ocean farming, seafood markets, and fisheries. In addition to warming oceans, there has been overfishing of available fish stock in areas like the South Atlantic that have caused

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tens of millions of dollars in economic loss due to depleting supply.\textsuperscript{158} Then, roughly 30 percent of fish that are caught on U.S. coastal waters that are consumed by Americans, are “exported for processing and imported again under a different trade code for consumption in the U.S.”\textsuperscript{159} These complex global supply chains increase the carbon footprint of the fishing industry and further weaken the supply. Warren’s proposal is to invest “$5 billion over ten years to expand USDA’s Local Agriculture Market Program” to simplify the infrastructure around seafood markets and support an additional 500,000 jobs and $31 billion in coastal economies.\textsuperscript{160}

The other tenet of Blue New Deal’s solution for rebuilding our blue economy focuses on renewable energy sources and infrastructure. Sea forests of algae and seaweed can help slow ocean acidification in the same way that land forestation efforts are used in carbon capturing. Warren calls on the USDA to “cultivate [algae and seaweed] just as we would any forest or aboveground ecosystem that naturally absorbs carbon dioxide”.\textsuperscript{161} These sea plants are also emerging as viable biofuel alternatives.\textsuperscript{162} In 2020, U.S. Navy Frigate \textit{USS Ford} sailed over 12,000 miles (1,228 NM) on a blend of algae-based biodiesel where “there was absolutely no difference, whatsoever, in the operation or


performance of the ship” according to USS Ford’s ship engineers and Solazyme energy company reviews.163

Warren’s blue economy plan also calls for investments in offshore wind and wave energy as a form of 100% clean energy. The plan cites an analysis published by the Environmental Law Institute in 2017 that estimates offshore wind could provide 400% the current capacity of our power grid and is more reliable than onshore wind technology.164 Warren pledged in her 2019 campaign to invest $2 trillion in “American-made clean energy…with a completely domestic supply chain…creating more new American jobs”165 as well as $400 billion over the next decade to R&D for clean energy.166

As a continuation of the investment in sea-based infrastructure, the Blue New Deal calls for newly enhanced “climate smart” ports. On NPR’s radio news program All Things Considered, reporter Rebecca Hersher reviewed how technology in shipping industries could reduce the impact of their “bunker fuel” emissions. In Hersher’s report, she cites Nerijus Poskus, the VP of Global Ocean Operations at Flexport that “if shipping was a country, it would be the sixth-largest polluter in the world [and] about 3% of global emissions are released by ocean freight shipping.”167 Warren’s solution includes

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166 Ibid.
electrifying our ports to reduce air pollutants, requiring speed reduction zones in ports to reduce emissions, and increasing the efficiency of port operations not through automation but increasing unionized port jobs in coastal communities.\textsuperscript{168}

The Natural Resources Defense Council (NRDC) echoed these efforts in a report published in September 2021 finding that union jobs improve the clean energy economy. In the report, NRDC finds that union experience saves money and reduces GHG emissions. Because union employers outspend non-union employers on training, and have higher labor standards, their workers are some of the most experienced and well trained in their industries. The report found through examples of local energy conversion projects in Ohio, Rhode Island, and New York that the investment in skilled union labor is projected to help save these communities up to $5.5 billion in energy costs by 2030 and reduce regional carbon emissions by up to 800,000 tons by 2040.\textsuperscript{169} Similar investments in coastal communities and the blue economy could have cost saving and emission reduction impacts as well.

**UNCLOS and Oil Drilling**

Most relevant to the argument of this chapter, however, are the Blue New Deal’s proposals concerning maritime operations on the ‘high seas’ and continued offshore oil drilling, as they play the most direct role on future U.S. Navy operations and national security interests. Because our oceans exist beyond U.S. national waters, the Blue New


Deal accounts for the need to collectivity manage international waters and the shared impact every country has on the ocean environment. High seas make up 64 percent of the ocean’s surface and 95 percent of the ocean’s volume. These high seas are “the parts of the ocean that are not included in the exclusive economic zones, territorial sea or internal waters of a State, or in the archipelagic waters of a State”. In short, no one nation has sole responsibility, control, or management of these waters.

In response, Warren’s plan included working with Congress “to ratify the [United Nations Convention on the] Law of the Sea (UNCLOS) treaty so that we are a party to this international law and can work towards updating provisions to better reflect the realities of climate change on our oceans.” UNCLOS first took place from 1973-1982 and has undergone several ratifications in the years since. The intent of UNCLOS was to replace the colonial concept of ‘freedom of the seas’ with a sort of constitution for the oceans to provide “guidelines for how nations use the world’s seas and their natural resources [and] contains mechanisms for addressing disputes.”

Republican leaders in the U.S. Senate, however, have prevented the U.S. ratification of UNCLOS despite 162 countries and the EU having done so. In 2016,

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171 Ibid.
during the most recent ratification, President Obama and U.S. military leaders called on the U.S. Congress to ratify UNCLOS but were met with conservative opposition stating that it will bring “all kinds of meritless environmental lawsuits” against the U.S. and would subject the U.S. to “stricter and…unnecessary environmental standards”. Later, this chapter will review the benefits of UNCLOS ratification to U.S. Navy operations as well as ocean environmental protections.

Lastly, Warren’s Blue New Deal calls for ending offshore drilling. Her promise was to sign an extensive executive order “ending all new fossil fuel leases offshore and on public lands”. In 2016, President Obama used the Outer Continental Shelf Lands Act to ban any new offshore oil and gas drilling in the Chukchi and Beaufort seas in the Arctic and in the Atlantic between Virginia and Massachusetts. Following the BP oil spill, the Obama administration also put in place oil drilling safety regulations that were later repealed by the Trump administration. The Trump administration offered several offshore leases in areas like the Gulf of Mexico where he “reduced royalty rates for shallow-water leases to encourage drilling at a time of low oil prices”.

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Support and Challenges

The Warren plan was to reverse or reinstate these initiatives to curb new offshore drilling leases and their incentives. The Biden administration, however, has outpaced the Trump administration’s drilling permits by 34%.\textsuperscript{180} The Biden administration attempted a review of new drilling leases to account for the “social cost of climate damage” which was struck down by the courts in February 2022.\textsuperscript{181} These new drilling leases were delayed pending the roll-out of a proposed plan from Department of the Interior Secretary Deb Haaland. Plans for offshore oil and gas development are due every five years; the Biden administration projects their plan will be available in late July 2022.\textsuperscript{182} As of June 2022, the Biden administration intends to continue lease sales for offshore drilling, concentrating in the Gulf of Mexico or parts of the Arctic Ocean.\textsuperscript{183}

Warren’s Blue New Deal, however, aimed to protect new drilling in the Atlantic and Arctic Oceans, reinstate the safety regulations for fossil fuel workers, and to reign in the near “$18 billion in federal royalties from offshore drilling”.\textsuperscript{184} To augment her plans for offshore wind production, her plan included phasing out of fossil fuel drilling entirely.


and transferring labor and technology resources to these new offshore wind farms.\textsuperscript{185} In his book \textit{All Hell Breaking Loose}, Michael Klare warns of the relation between melting polar caps in the Arctic and the emergence of new conflict zones over energy resources leading to Great Power clashes.\textsuperscript{186} The analysis of this chapter will review the consequences of newly accessible Arctic oil on national security interests and how they converge with Progressive plans like the Blue New Deal.

Opposition to the Blue New Deal is limited, in part because it has received significantly less attention than the common climate buzz that surrounds the Green New Deal. However, Brett Walton, a writer for Circle of Blue, a water and climate non-profit, whose journalism career has focused on the politics and economics of water, critiqued the Blue New Deal after its announcement in 2019. Walton acknowledged that on the front of water policy there are no plans as comprehensive or even as present as the Blue New Deal. He interviewed Sri Vedachalam, Director of Water Equity and Climate Resilience at the Environmental Policy Innovation Center. Vedechalam agreed, the Blue New Deal had the kind of detail “you typically see once a president is in office” but argued the proposal’s two remedies are not fully formed.\textsuperscript{187}

The Blue New Deal calls on agribusiness to “pay the full cost of environmental damage by closing loopholes and stepping up enforcement”, but Vedechalam said that the federal fines are merely a “slap on the wrist” and that the states end up with more

\textsuperscript{185} Ibid.
\textsuperscript{186} Klare, Michael T. \textit{All Hell Breaking Loose: The Pentagon's Perspective on Climate Change}. PICADOR, 2020. 120.
delegated power in this industry.\textsuperscript{188} The other solution proposed by Warren included reinstating Obama-era protected waterways in the Clean Water Act that the Trump administration had repealed. Vedechalam reminds that the courts blocked the Obama administrations ruling, and that “without some restructuring, it cannot simply be reinstated”.\textsuperscript{189} The most glaring opposition to plans like the Blue New Deal come from the fossil fuel industry, who are incentivized to renew leases for offshore drilling with as few environmental regulations as possible, both federally and from UNCLOS.

Water and climate professionals agree that the Blue New Deal initiative “is one of the few bright spots for environmental politics in Congress”\textsuperscript{190}, but it is merely a start. The ideas embedded within the plan have received limited to no critiques from oceanography and climate science experts. The politics of implementing the ideas, however, are the challenge for Progressive leaders. More specifically, as this chapter is focused, how this environmental science supported Progressive policies co-mingle with the objectives of the Department of Defense and national security interests presents additional hurdles for proposals like the Blue New Deal.

**Great Power Competition in the Arctic**

Once inaccessible, the Arctic region has now become open to oil drilling due to rapidly melting ice caps. It has also become the site of new economic interest in the battle for Great Power Competition between Russia, China, and the United States. In *All Hell Breaking Loose*, Michael Klare describes a military exercise conducted in northern

\textsuperscript{188} Ibid.
\textsuperscript{189} Ibid.
\textsuperscript{190} Ibid.
Norway and the Arctic region in 2016 comprised of 3,000 U.S. military troops and 12,000 NATO forces called Exercise Cold Response. Exercise Cold Response was the “largest multinational maneuver conducted in Europe’s far north since the Cold War” where forces conducted combat training in these colder environments, testing skills and weaponry in climates largely foreign to the primarily desert-fighting forces.

The U.S. and its allies “are seriously contemplating the possibility of great-power combat occurring in the Arctic region” and they are not the only nation with newfound interest in the Arctic as a battlefront. In search of energy reserves, Russia has moved deeper into the Arctic region, built up their Northern Fleet in Murmansk, and expanded their bases in the Kola Peninsula. In 2016, the Department of Defense reported to Congress that “in the mid- to far term, as ice recedes and resource extraction technology improves, competition for economic advantage and a desire to exert influence over an area of increasing geostrategic importance could lead to increased tension” in the Arctic region. They also warned that “these economic and security concerns may increase the risk of disputes between Arctic and non-Arctic nations over access to Arctic shipping lanes and natural resources.”

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191 Klare, Michael T. All Hell Breaking Loose: The Pentagon’s Perspective on Climate Change. PICADOR, 2020. 121.
192 Ibid, 120.
193 Ibid, 123.
196 Ibid.
Despite their geographic advantage with more than 20% of their land mass lying above the Arctic circle, Russia is not the only global player interested in this new maritime and energy reserve frontier.\textsuperscript{197} China has claimed itself an active partner in the geopolitical tension building in the Arctic. In 2018, China released their “Arctic Policy” that outlined Beijing’s intent to grow the Belt and Road (BRI) trade route forming a “Polar Silk Road” between Asia and Europe for the purpose of shipping, resource mining, and state maritime security.\textsuperscript{198} Unlike Russia, who has made Arctic countries like Norway nervous with their growing military action in the region, Chinese state-owned oil companies have partnered with these countries to begin actively drilling in the Arctic.\textsuperscript{199}

The U.S. is still developing their response to the growing action in the Arctic. In the 2016 report, the Pentagon outlined two priorities. The first was to defend the nation’s borders from potential attacks originating in the Arctic through upgrades in detection systems like the North American Aerospace Defense Command (NORAD). The second was to prepare U.S. forces and its allies to defeat adversaries in the Arctic itself.\textsuperscript{200} In 2018, Secretary of Defense Jim Mattis visited Alaska commenting “America’s got to up

\textsuperscript{197} Ibid.
its game in the Arctic” in response to increased drilling interests by Russia, China, and international fossil fuel leaders.201

These geopolitical tensions are in response to changes in climate and our oceans. Klare claims that “the Arctic could prove to be the first region of the world in which climate change plays a direct role in provoking conflict among the major powers.”202 Rising temperatures are causing sharp rises in sea levels due to melting ice caps in polar regions and water expansion due to ocean heat content. Between 1900 and 1990 average sea levels rose approximately four inches, from 1990 to 2015 they rose an additional three inches, and projections claim that by 2100 sea levels may rise another one to eight feet.203

U.S. Navy on Climate Changing Seas

In an informal meeting in May 2022 with the Washington, D.C. chapter of the United States Naval Academy Alumni Association, Secretary of the Navy Carlos Del Toro answered questions about the Navy’s concerns with global warming impacting the DoD’s Great Power Competition mission. In response, Del Toro said, “it’s no longer about adapting, the climate crisis is real, and it is here…[and] the Navy’s biggest concern is rising sea levels”.204 Del Toro shared his concerns for Naval bases like Marine Corps

Recruit Depot in Parris Island South Carolina that is predicted to be three-quarters underwater by the end of the century or the single causeway connected to mainland roads capsized in under 15 years.\textsuperscript{205}

Naval and Coast Guard bases across the country face similar threats of sea level encroachment on their seawall and port infrastructure. However, changes in coastal landscapes due to sea level rise also shift the definition of maritime borders. According to UNCLOS, coastal nations may claim maritime control or exclusive economic zone (EEZ) up to two hundred miles from their shorelines or the midpoint between two nations with separate coastlines less than 400 miles apart.\textsuperscript{206} As sea levels rise, however, those shorelines begin to recede creating newly ambiguous interpretations of these maritime economic zones. For instance, the highly contested Spratly Islands, a tight grouping of small atolls and archipelagic reefs and islands, lie between the Philippines and Vietnam in the South China Sea. China claims contested EEZ to these islands and abundance of oil and fishing resources found in the hundreds of miles surrounding them. However, were they to become completely submerged due to rises in sea level, the question remains if other nations would view that as international waters or Chinese EEZ. As it stands today, most UNCLOS partnered nations and the United States attest that these waters remain available to freedom of navigation under the treaty.\textsuperscript{207}


Though the United States abides by the convention’s EEZ standards, they have not ratified UNCLOS and therefore are not afforded any legal or financial protection in resolving territorial conflicts and their claims to proprietary rights and energy interests.\(^\text{208}\) They are also not responsible for upholding environmental protection regulations led by UNCLOS participating nations. The changes in the Arctic climate present a challenge to the five Arctic nations: the United States, Canada, Russia, Norway, and Denmark. As these physical maritime boundaries transform and these and other nations race to lay claim to the energy resources in the region, disputes will emerge as the continental shelf changes. Russia has already made submissions claiming vast expansions to its continental margin, potentially overlapping with Canada and the United States, as its coastline would extend claim to almost half the Arctic.\(^\text{209}\)

This new maritime frontier complicates national security interests on redefined high seas and international waters. However, the primary interest of these countries is the energy resources, namely oil, available in the region. According to a U.S. Geological Survey in 2008, 22% of the world’s unconventional oil and gas reserves are concentrated in the Arctic, amounting to more than 400 billion barrels of oil.\(^\text{210}\) In 2009, Chief of Naval Operations Admiral Gary Roughead established a Climate Change Task Force that developed a Naval Road Map to the Arctic under an outgoing Bush administration.\(^\text{211}\)


\(^{209}\) Ibid.


The roadmap highlighted the administration’s principal objective in the Arctic was drilling. It noted that “the current scientific consensus indicates the Arctic may experience nearly ice-free summers sometime in the 2030s”\textsuperscript{212} and that the Navy was unprepared to support U.S. interests in pursuing new “resource extraction, tourism, and intercontinental trade”\textsuperscript{213} in the region.

The Arctic has a growing perception that it will be the stage for Great Power Competition in future international conflict. In 2019, Secretary of State Mike Pompeo announced that the U.S. was “entering a new age of strategic engagement in the Arctic, complete with new threats to the Arctic and its real estate.”\textsuperscript{214} The U.S.’s national security adversaries, like Russia, have specifically tasked their military presence in the region with the protection of resource assets like oil reserves.\textsuperscript{215} In response, the U.S. Navy is now conducting “freedom of navigation” operations in the Arctic as a show of force, similar to those in the South China Sea. These changes in national security and defense postures are not due to the cascading effects of global warming but are instead directly in response to changes in sea states and their impact to the blue economy.

**Conclusion**

Though the Department of Defense is ascribed as an apolitical entity, its strategies have often been closely linked to the interests of the fossil fuel industry as they are the

\textsuperscript{212} Ibid.
\textsuperscript{213} Klare, Michael T. *All Hell Breaking Loose: The Pentagon's Perspective on Climate Change*. PICADOR, 2020. 127.
largest institutional fuel consumer of fossil fuels in the world, ahead of most nations. It is difficult, therefore, to see where Progressive Democratic plans like the Blue New Deal meets the interests of the U.S. military and their objectives. However, the Pentagon, particularly under the direction of both the Obama and Biden administration, have been sounding the alarm on the impact of global warming to defense industry interests.

The toll global warming has on our oceans, its resources, the blue economy, and our shorelines is clear. Warren’s solutions for electrifying commercial seaports, for example, is merely a call to broaden the shore power technology that the U.S. Navy has been using for decades as a part of their Incentivized Shipboard Energy Conservation program into the commercial sector. Similarly, as demonstrated by the USS Ford, Naval warship technology is prepared to operate on fuels comprised of algae and biomatter. These capabilities have been present as early as 2012 when Secretary of the Navy Ray Mabus launched his Great Green Fleet initiative which by 2016 resulted in a full Naval Strike Group comprised of one aircraft carrier, one guided missile cruiser, three guided missile destroyers, and an entire air wing of jet and rotary aircraft operating on a blend of algae and animal waste biofuels.

Following the Obama administrations direction that the Defense Department curtail their extreme carbon emissions, a boom of algal and renewable fuel companies

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blossomed under government subsidies in 2009. However, once these subsidies ran dry and the political will to transition to a biodiesel powered military slowed, the industry saw a reduction in growth. Defense industry fossil fuel transition also stalled through the Trump administrations swift repeal of Obama era environmental plans.

The nexus between plans like the Blue New Deal and the science-backed energy objectives of the Pentagon lies in the need for U.S. energy security. Conflicts between Russia and Ukraine have highlighted the global reliance on fossil fuels and the market has been heavily impacted by our dependence. Warren’s plan, from its protection of fish stock and the shipping economy to weatherizing and mitigating impacts on coastal cities and ports not only reduces impact to the ocean environment, but also aims to maintain American leadership in the global economy, both of which are national security interests.

By investing in renewable energy sources and moving away from the chokehold the fossil fuel industry has on our economy, government, and energy industry—plans like the Blue New Deal open the U.S. to becoming leaders in a global energy transition. The defense industry should lead the charge for this transition. In February 2022, Deputy Secretary of Defense Kathleen Hicks agreed that “the Department of Defense has an opportunity to lead the way in transitioning to carbon pollution-free [energy]…it’s not

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just critical to addressing the threat of climate change, but also to our national security as we work to secure U.S. competitiveness in rapidly shifting global energy markets”.\textsuperscript{221}

This should be a signal to the fossil fuel industry that they will not be the sole provider of military energy for long. Even with the newly viable reserves in the Arctic, global fossil fuel resources including all coal, oil, and natural gas, will be depleted in the next 100 years.\textsuperscript{222} By investing in alternative energy resources in defense spaces, the Department of Defense not only shifts the needle on energy markets, but also could have a de-escalation effect on the growing tensions in the Arctic.

Following the recommendation of Senator Warren, as well as President Obama and the Pentagon before her, Congress’s ratification of UNCLOS could better protect U.S. interests on the high seas, require U.S. shipping industries to abide by stricter environmental regulations, speed maritime transition to renewable biofuels, and phasedown the pending resource war in the Arctic. The quest for U.S. energy ‘independence’ marries Progressive plans like the Blue New Deal and national security interests in reducing U.S. reliance on foreign oil.

No country is truly energy independent in a global economy. However, the U.S. military should be at the forefront of the campaign for energy transition, free to use the full might of their costly resources to build, innovate, develop, and invest in American made green technology. This leadership would place the U.S. out in front of its


adversaries, reduce the threat to both national and energy security, and benefit the environment. The energy security and environmental protection objectives of the Blue New Deal and the U.S. military are more intricately linked than the partisan fossil fuel lobby would prefer us to know.
Conclusion

The climate crisis is manmade and requires swift and aggressive solutions. Even with a reduction of carbon emissions, global warming has hit a point of no return.²²³ However, emissions reductions and carbon capture technology will reduce the effects of global warming by improving air quality, human health, and crop and livestock productivity, and reducing intensified precipitation events, wildfires, and disease spread.²²⁴ The Department of Defense, oil industry, and U.S. legislators all play key roles in mitigating and abating global warming effects. Environmental and energy security officials recommend as rapid a transition away from fossil fuels and towards renewable energy as industry and technology will allow. This transition, however, is not without its political and social challenges. The Pentagon should position itself as a leader in energy transition and pro-climate measures.

This thesis argues that the U.S. military has the responsibility and the means to address the effects global warming has on national security. The first chapter reviewed the information warfare and public information infrastructure that exists within the military and how it can be used to label global warming a threat more aggressively and publicly to national security both elevating the nonpartisan pressure for action as well as dispelling climate misinformation and denialism. The second chapter highlighted how climate change causes a ripple effect leading to ‘global shockwaves’ with a series of

cascading events like mass climate migration that weaken U.S. national security. Lastly, the third chapter reviewed Progressive climate proposals like the ‘Blue New Deal’ and analyzed the direct impact global warming was having on our oceans, particularly in the Arctic region where melting ice caps have created a breeding ground for new energy resource tensions amongst global powers.

This thesis has reviewed ways in which national security is threatened by climate change and touches on suggestions for how the military might further abate the effects of global warming on national security. As early as 2006 in the Quadrennial Defense Review, military officials have shared their climate change concerns with Congress and within defense spaces calling global warming a “threat multiplier” and a “serious threat to America’s national security”. If for nearly twenty years the Pentagon has predicted and seen how global warming threatens U.S. national security, why then, have they not pushed to adopt more aggressive pro-climate measures and transitions to alternative sustainable energy in defense spaces?

There are a few challenges the Department of Defense faces in officially naming global warming such a formidable threat, transitioning away from fossil fuels, and adopting a strong stance on climate issues. The first of these challenges is the politicization of climate policy. The DoD is charged with operating as an apolitical entity. Climate policy has become associative with the far left in American politics. The first chapter of this thesis reviewed how even the most ideologically conservative members of the Congressional GOP have agreed that the climate crisis is real and requires legislative

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attention. Politically, both Democrats and Republicans are receiving pressure from youth voters who “overwhelmingly rate climate change as one of the top issues that influence who they vote for…and an issue that they really strongly care about”.226 Young people, often discounted due to low voting rates227, make up the majority of activists228, implying that youth voter turnout does not necessarily correlate to lack of political motivation or social capital.

While the Pentagon may avoid overt calls for more aggressive climate policy to limit the perception of partisan lean, the youth vote pressuring both sides of the aisle is evidence of the growing bipartisan support for government institutions to address agency specific impacts to climate. These sorts of political pressures are absent from the reality of climate science discussed in the first chapter. The Department of Defense internally recognizes the scientific reality of global warming and its impact on national security providing them with politically agnostic support and reasoning to take on more pro-climate measures. There is room, therefore, for the U.S. military to become agents of change and position themselves as leaders in energy transition and climate adaptation, particularly by framing the issue as a threat to national security as opposed to merely environmental.


The Department of Defense was most focused on climate issues during the second Obama administration and the current Biden administration. Secretary of the Navy Ray Mabus launched his Great Green Fleet initiative in the early 2010s following Obama era executive orders. The Trump administration reversed these orders, only to be succeeded by President Biden who reworked the original Obama calls to action with more aggressive timelines a decade later. In the years between these two Democratic presidencies, the forward motion of initiatives like the Great Green Fleet or the Defense Climate Roadmap stalled. Without executive prioritization, the Pentagon returned their focus to more natural and conventional military threats like the ongoing War in Afghanistan, American intervention in Libya combatting ISIS, terrorist resistance efforts in Uganda, or piracy intervention in Somalia.

Even as these conflicts ended throughout the 2010s, the Pentagon’s attention was not returned in full force towards the national security threat of climate change. The U.S. military is still currently engaged in interventions in Northern Iraq, Operation Inherent Resolve in response to the Syrian Civil War, Rim of the Pacific exercises in the South China Sea, and continued abatement of Russian and Chinese global superpowers in the Great Power Competition struggle. This presents yet another challenge for military prioritization of climate threats. Absent of the political leadership inclined to direct the DoD to address climate threats more aggressively, the U.S. military has plenty on its plate to focus on. However, both the second and third chapters of this thesis highlight in part how these global conflicts are escalated by the climate crisis in direct and indirect ways.
This is what is meant by the term ‘threat multiplier’ used in defense climate reports. While the DoD does see a clear threat posed by global warming to national security, they see their more conventional threats as the primary concern and climate change as an aggravating factor. This is what has led to the mild climate prioritization shown in the defense budget review of the first chapter. For example, the climate budget commitment is merely a fraction when compared to budget line items like the Afghan Security Force for a withdrawn war. On the scale of impact, the Department of Defense has made other security threats and implications a higher priority.

This threat prioritization is easier to comprehend when comparing an active terrorist group with anti-American sentiments to the indirect example of resource conflict sparking climate migration and civil unrest. However, the direct impact global warming has on national security interests in the Arctic is more difficult to ignore. The changes in sea levels discussed in the third chapter of this thesis are much harder to overlook due to the correlation between environmental security, energy security, and national security. Here, the challenge of threat prioritization becomes muddled, as Great Power Competition, securing newly untapped energy resources, and the environmental ocean changes all collide. The rising tensions in the Arctic make it the first of its kind in climate conflict.

Let us say then, as it relates to the Arctic, that the Department of Defense chooses to publicly label climate change a national security threat with the same alacrity as other more conventional threats. The next challenge pro-climate plans face is the political gridlock within Congress and public tensions with the courts. The challenge solutions like the Blue New Deal, its predecessor the Green New Deal, or even some new
legislative proposal by the Progressive left faces is that legislation is not passing the
current 50-50 Congress, or if they did, they would be challenged and not favorably with
the current makeup of the Supreme Court. Proposals have been made for abolition of the
Senate filibuster, changes to Senate cloture rules, expansion of Supreme Court seats, or
ending gerrymandering—all as attempts to alter the current design of American
congressional politics and court dynamics to pass Progressive legislation more
seamlessly. This is a political challenge to all legislative proposals, not just Senator
Warren’s Blue New Deal.

If, however, two-thirds of Americans “believe that the federal government falls
short in its efforts to reduce the impacts of climate change”\(^\text{229}\) it would seem to be a
simple bipartisan decision to support climate legislation. This leads us to the final and
largest hurdle for pro-climate measures, not just within the Department of Defense. The
fossil fuel industry has a chokehold on legislators and the military. Fossil fuel interests
stand strongly in the way of swift energy transition.

In a 2021 Congressional memo from the Committee on Oversight and Reform, an
analysis of lobbying data from Chevron, Shell, BP, ExxonMobil, and the American
Petroleum Institute (API) found that “the oil industry’s public support for climate reforms
had not been matched by meaningful action to advance these policy results.”\(^\text{230}\) The

\(^{229}\) Tyson, A., & Kennedy, B. (2021, July 12). Two-Thirds of Americans Think Government Should Do
https://www.pewresearch.org/science/2020/06/23/two-thirds-of-americans-think-government-
should-do-more-on-climate/

Public Praise for Climate Policies Is Not Backed by Meaningful Action. House Committee on
releases/committee-analysis-of-fossil-fuel-industry-s-lobbying-reveals-public-praise-for
analysis accused oil companies of ‘greenwashing’ their efforts to “bolster their public image while continuing to produce and invest in fossil fuels.” These measures attempt to disguise the fact that 134 members of Congress own nearly $93 million worth of fossil fuel stocks. These influences are partisan. Republicans more typically vote against climate legislation that is designed to limit fossil fuel production and pollution. Similarly, they own up to $60.4 million in fossil fuel stocks, while Democrats own as much as $32.3 million. Not only do legislators hold personal financial interests in the fossil fuel industry, but a study by the Proceedings of the National Academy of Sciences found that “the more a given member of Congress votes against environmental policies, the more contributions they receive from oil and gas companies supporting their reelection” using twenty-eight years of campaign contribution data. Additionally, Representative Levin (D-CA) and Representative Casten (D-IL) are the only two known members with significant personal investments in clean energy who may benefit from carbon regulation. In response, House Democrats are drafting a bill to limit the ability of members, staffers, and their families from making stock trades based on their access to privileged insider Congressional information.

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231 Ibid.
233 Ibid.
The U.S. military is not immune to these influences either. The tensions sparking in the Arctic over new fossil fuel reserves is a new example of how the U.S. military has been used to defend and pursue oil. In 2018, a study found that the Department of Defense had spent approximately $81 billion a year protecting global oil supplies, making up approximately 16% of the average defense budget. Former Director of National Intelligence and Commander of U.S. Pacific Command, Admiral Dennis C. Blair warned, “if we reduced our oil consumption by half, [the U.S. military] would act differently.”

Moving away from fossil fuels as a primary source of energy not only benefits the environment but it deescalates tensions between global powers and increases energy security at home. Former Commander of U.S. Transportation Command, General Duncan McNabb, stated, “if we can reduce [military] dependence on oil, we could reduce our presence in the Gulf and use the funds for other critical military priorities…we could make different choices, that would make us safer and more secure.” In a globalized market, where goods, services, and capital have become so internationally integrated—there is no such thing as true energy independence. The U.S. will always have to rely, in some way, on importing technology, minerals, or manufacturing even under renewable energy practices. However, relying solely on the depleting nonrenewable resources like oil, natural gas, and coal result in significantly more energy dependence on fossil fuel

reserves found in foreign, often adversarial, countries or in climate vulnerable regions like the Arctic.

The U.S. military has served as a driving force for the American economy and a powerfully influential institution on the global stage. Independent of their stimulus, however, Progressive plans like Senator Warren’s Blue New Deal must face the political hurdles within Congress and the courts to come to fruition. Legislative or executive solutions like the Blue New Deal or its predecessor the Green New Deal aim to tackle a whole slew of issues in one swing. While environmental and financial experts acknowledge there are “no technical or economic weaknesses”240 to these proposals, they also recognize that the “social and political opposition is formidable”241. Because of the might of the fossil fuel lobby, narrower bills with bipartisan sponsors may be more appropriate to address the energy transition issues that “heartland voters in states like Texas, Iowa, and Oklahoma share with a lot of coastal voters in embracing cheap wind and solar power”.242 These large proposals would likely see more cross-party political success if broken up and passed in piecemeal, although that could also slow and change the intended nature of these proposals.

Climate measures like those provided in the Inflation Reduction Act of 2022 (IRA) provide a strong start for necessary emissions reduction. The bill, which was approved by the House and Senate on August 12, 2022, and is expected to be approved

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241 Ibid.

by President Biden in August 2022 addresses several issues, including healthcare, manufacturing, and energy production. The IRA focuses on energy security and climate change by using FY22 budget reconciliation funding to prepare the U.S. to meet 40% emissions reductions by 2030 making it the single greatest climate investment in U.S. history.243

These investments are projected to lower energy costs for Americans by investing in technologies that lower emissions and prices. The IRA invests in federal support and tax credits for clean climate solutions to promote decarbonization in all sectors of the economy and increases U.S. energy security by lessening foreign energy reliance and supporting production, manufacturing, and jobs creation in the clean energy economy. The act makes historic investments into climate-smart agriculture practices as well as provides grant funding to disadvantaged communities facing environmental justice issues.

This new bill highlights the pressing need for swift energy transition that benefits not only the environment but also energy and national security. As one of the global top carbon emitters, the U.S. military is positioned to make great public, economic, and environmental impacts by transitioning away from fossil fuels and investing national defense money into clean energy technology. Climate change threatens our energy security; leads to increased tensions and armed conflict over resources, food, and shelter;

causes droughts, floods, fires, and catastrophic weather events; and leaves Americans vulnerable to volatile markets, pandemic spread, or surges in climate migration.

The newly passed Inflation Reduction Act, which is a pared down iteration of the Biden administration’s Build Back Better agenda, took over a year and a half to pass the Democratic majority House and Senate. The original Build Back Better proposal asked for $3.5 trillion over ten years\textsuperscript{244} which later came down to $1.75 trillion\textsuperscript{245} which was then later scrapped for the $433 billion over ten years IRA.\textsuperscript{246} There was a political stalemate within the Democratic caucus over approving what some saw as bloated spending for social programs, to include environmental and energy investments, under the most progressive climate focused presidency in history. Despite this spending hesitation, when it came time for Congress to approve the annual defense budget, not only did they approve President Biden’s initial FY23 request for more than $800 billion, but they also added on tens of billions of dollars more than requested.\textsuperscript{247}

This approval of the National Defense Authorization Act (NDAA) “does not provide budget authority but establishes policy and provides guidance on how appropriated funds should be spent on authorized activities”\textsuperscript{248} unlike an appropriations


\textsuperscript{248} Ibid.
The U.S. military has the largest allocations of the federal budget and significant internal freedom to set the agenda for how their money will be spent through the NDAA. That agenda setting guidance was clearly outlined when the Commander in Chief directed the Department of Defense to prioritize energy and national security by adopting mitigation and adaptation measures and reducing agency emissions by signing EO 14008 ‘Tackling the Climate Crisis at Home and Abroad’. Military leaders have echoed the president’s concerns that climate change poses a widening threat to national security both directly and indirectly. The threat multiplier that is global warming calls for a reprioritization of defense spending and a commitment by the Pentagon to address this growing threat more proportionally. The Department of Defense has a responsibility to preserve national security by adopting more aggressive and public pro-climate measures and prioritizing the climate crisis as a high national security threat.
Bibliography


Curriculum Vitae

Megan Glancey grew up in El Paso, TX before attending the U.S. Naval Academy in Annapolis, MD where she received a Bachelor of Science in English and her commission as a Naval Officer in 2014. Megan was selected to train at NAS Pensacola, FL to become a Naval Flight Officer. Upon completion of training through NASC, VT-10, and VT-86 she was then selected to fly in the EA-18 Growler community and earned her Wings of Gold in June 2016.

Following her winging, Megan reported to NAS Whidbey Island, WA where she began training with VAQ-129 to become a qualified Electronic Warfare Officer in the EA-18 Growler. After completion of training at the Fleet Replacement Squadron, she was selected to fly with VAQ-133 Wizards in March 2018.

While flying with VAQ-133, Megan joined CAG-9 onboard the USS JOHN C. STENNIS for a worldwide deployment tour in October 2018.

Megan Glancey participated in forward deployed flights over 7THFLEET in the South China Sea completing SSC operations. She also flew combat missions over Afghanistan, Iraq, and Syria during operations in 5THFLEET and Arabian Gulf supporting OPERATION INHERENT RESOLVE and OPERATION ENDURING FREEDOM in early 2019.

Megan Glancey later transitioned to the Information Warfare Community as a Cryptologic Warfare Officer joining Cryptologic Warfare Activity-67 at Fort Meade, MD. While with CWA-67, Megan worked for the National Security Agency in the Office of Policy as a Corporate Policy Officer writing and promulgating Signals Intelligence Directives (USSIDs) working with federal agency stakeholders on behalf of the USSS. Megan also served as the Administrative Department Head and lead Sexual Assault Prevention Response Victim Advocate for her command.

During this time, Megan was also selected to serve the Biden Administration as a White House Social Aide directly servicing the presidency, executive mansion, and their social staff. Megan received her Master of Arts in Government with a focus in Political Communication from Johns Hopkins University in December 2022. She completed a DoD Skillbridge Fellowship Program with the Urban Institute as a research fellow writing labor and workforce development policy for US Department of Labor grant recipients. Megan is now working as a Renewable Energy Development Manager for Invenergy out of their Denver, CO office.