



Weaponizing nature: The geopolitical ecology of the US Navy's biofuel program



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ABSTRACT

The United States military is treating climate change as a crucial factor in its preparation for future conflicts. This concern manifests not only in strategic planning and forward-looking documents, but also in building infrastructural capacity and material provision. Yet, the impetus to 'green' the military goes beyond the deployment of existing technologies. We examine several facets of the military's role as an environmental actor, particularly through its promotion of the US Navy's 'Great Green Fleet' (GGF), which actively supports the development of advanced biofuels by subsidizing their development and facilitating wider marketization. The GGF promises to reduce military reliance on conventional fossil fuels and reconfigure its energy sourcing, thus reducing dependence on imported hydrocarbons; this is with an eye towards ultimately severing the logistical relationship between existing energy infrastructures and the spaces of military intervention. Taking an integrated lens of political ecology and geopolitics - 'geopolitical ecology' - we seek to provide an understanding of the production of weaponized nature. We demonstrate that the US military's discursive use of climate change to justify the provision of new military hardware and advanced biofuels promotes a vision of resource conflicts to support the development of technologies to overcome the constraints to delivery of fuel to emergent front lines. We argue that while this may appear to be militarized greenwashing, it signals a shift in the logics and practices of fuel sourcing driven by a dystopian vision of climate change, which the US military played a significant role in creating.

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'The impacts of climate change may increase the frequency, scale, and complexity of future missions, including defense support to civil authorities, while at the same time undermining the capacity of our domestic installations to support training activities. Our actions to increase ... renewable energy sources will increase the resiliency of our installations and help mitigate their effects.'

(US Department of Defense Quadrennial Defense Review: Hegel, 2014)

'The Navy is open for business.'

(Vice Admiral Dennis McGinn, US Navy: in Lane, 2013)

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Introduction

January 2012 was momentous for the United States Navy and for a number of seemingly unrelated actors, from cattle ranchers and chicken farmers to climate scientists. At the 2012 Rim of the Pacific Exercises, the world's largest naval war game, US Navy Secretary Ray Mabus demonstrated the United States' newest and most advanced naval strike force, the 'Great Green Fleet' (GGF). For Mabus, this tactical fleet, including both ships and aircraft, validated what the Navy described as its commitment to fighting global climate change through energy-saving technologies and adoption of advanced biofuels made from a variety of non-food feedstocks, including algae, crop residues, vegetable oils and processed beef and chicken animal fats (Hess & Joyce, 2016). Yet while Mabus trumpeted future maritime superiority through reduced dependence on conventional hydrocarbons, the stakes are potentially much higher: to radically reconfigure the US military's long-standing and complicated logistical relationships with fossil-fuel infrastructures in light of emerging geopolitical entanglements

influenced by climate change. This goal has become increasingly important given the US military's projections of more frequent and dispersed conflicts and the role of the military in responding to humanitarian disasters brought on by climate change.¹ The Navy is treating climate change as a crucial factor in its preparations for domestic and overseas operations. This moves beyond strategic planning and forward-looking documents, to building infrastructure capacity and changing material provision, including US unconventional fuel refining and distribution capacity. With a few exceptions, however, the political meaning and socio-ecological implications of the military's increased attention to climate change remain largely unexamined (Chambers & Yativ, 2011; Gilbert, 2012).

The aim of this article is to examine the US Navy's understanding of climate change in justifying its development of the GGF and reimagining the US military's role in a warming world. We do so by advancing 'geopolitical ecology' as a conceptual framework that combines the strengths of political ecology with those of geopolitics in order to account for, and gain a deeper understanding of, the role of large geopolitical institutions, like the US military, in environmental change. We illustrate the material effects of the US military's pessimistic projection of a warming world and how it uses this to justify not only the adoption of new technologies, but a potential transformation in how it fights wars. We demonstrate that the Navy's move towards biofuels is not just a simple case of 'greenwashing' or a contemporary twist on domestic energy security, but a strategic mobilization to transform energy spatialities while projecting military dominance in emerging spaces of conflict perceived to be exacerbated by climate change (Buxton & Hayes, 2015; Gilbert, 2012).

Geopolitical ecology can be thought of in reference to Blaikie and Brookfield's (1987, p. 13), classic definition of political ecology as '... combining the concerns of ecology with a broadly defined political economy.' We expand on this definition of political ecology, placing geopolitics alongside political economy, as it is critical not to lose sight of specifically capitalist political economics in (and often for) which military force is utilized (Lenin, 1957; Harvey, 2003; Mitchell, 2013). In other words, by adding the 'geo' prefix we seek to find synergies between political ecologists' careful attention to multi-scale environmental politics and the discursive-material co-constitution of global institutional geopolitics. We make no great claims to novelty in this regard – the impetus to create this kind of framework is well established, for example, in the work of Juanita Sundberg (2009), Timothy Mitchell (2013), Chaturvedi and Doyle (2015), Simon Dalby (2014) and, to some extent, the 'world ecology' literature (e.g. Moore, 2015). However, we feel that an explicit encounter between critical geopolitics and political ecology is timely (Benjaminsen, Buhaug, McConnell, Sharp, & Steinberg, 2017), particularly if we are to understand the larger institutional processes at work to discursively and materially produce global natures.

The US Navy's adoption of drop-in biofuels is just one part of a host of climate change mitigation and adaptation strategies to 'weaponize' material aspects of nature and adopt discourse that frames nature both as a military asset and as a set of problems to be overcome through military means (Kosek, 2010; Mitchell, 2003). Nature is weaponized when it is 'used by armed actors to do harm' (Koopman, 2016, p. 530). While the Navy's initiative to reduce its climate footprint can be observed as a move in a positive direction,

it should not distract from the fact that 'the main job [of the military] is to fight wars. That means breaking things and killing people ...' (Burke, quoted in Goodell, 2015). In this regard, nature is being weaponized in two ways: first, the Navy is using a selective interpretation of futures made possible by climate change to project emerging threats which need military-style responses, even if those interventions are ostensibly humanitarian. In the GGF's first full-scale deployment, the carrier group was dispatched to the Mediterranean Sea at the same time as another carrier group² that was in the process of 'setting records' for the number of bombs dropped on Syria (Eckstein, 2016) – a conflict that is (problematically) considered by some as being driven in part by climate change-induced droughts (Kelley, Mohtadi, Cane, Seager, & Kushnir, 2015). This interpretation of threats then provides the justification for the second way nature is weaponized, which is increased support for the nascent domestic biofuels industry and a desire to break from existing fossil fuel infrastructures that allows for more military flexibility in response to these threats. This list of potential threats is growing, including deteriorating environmental conditions; these are contributing to humanitarian disasters and the disappearance of Arctic sea ice, leading to both new security challenges and commercial opportunities that require military protection.

Crucially, the Navy's 'green' transformation towards biofuels relies substantially on the private sector, as the Navy has neither experience nor remit to manufacture its own material, including (and especially) fuel. To accomplish its goal of sourcing half of its fuel from renewables by 2020, the Navy is directly financing purchase guarantees to bio-refineries and subsidizing infrastructure on a large scale (MacCormack, 2016). The US military has long been a significant actor in the US, and global, economy, not only because of its sheer purchasing power but also through its capacity to nurture new technologies, and even entire industries, from concept to large-scale deployment (Cypher, 1987). Industries supported by military purchasing, such as aluminium or microchips, have had profound impacts on local and global ecologies (Magaziner & Reich, 1983; Mirsky, 2005). The Navy's move toward biofuels is framed as a 'win-win-win' as it looks to deliver positive environmental outcomes, while also furthering national security priorities and subsidizing a new US industry. These three aims are coincident with the analytical outlook of geopolitical ecology, encompassing geopolitics and political ecology, which in turn integrates political economy with environmental change.

In the next section, we describe the broad contours of the geopolitical ecology approach to highlight the US military as an environmental actor. We discuss previous political ecology approaches to military/environment relations (e.g. weaponizing nature) particularly in reference to militarized conservation – the focus of most literature. We demonstrate how the addition of critical geopolitics can enrich analyses of environmental change influenced by militaries or broader national security institutions or imperatives. Section three turns that geopolitical ecology lens towards the way the US military has developed climate change as a geostrategic discourse (Sparke, 2007) which understands global warming as a 'threat multiplier' that will increase the need for US military intervention across the globe. The empirical section that follows works through one of the ways in which the US military's geostrategic discourse is being mobilized to weaponize nature through the production of advanced biofuels. These new fuels are meant to both mitigate greenhouse gas emissions and allow

¹ The degree to which any single event is attributable to climate change is difficult to ascertain, and all the more so when combined with complicated geopolitical and geo-historical relations that drive internal and international conflict.

² The GGF did not participate in combat operations at the time, though military officials highlighted the power of the 'optic' created by positioning multiple carrier groups in the Mediterranean at the same time (Eckstein, 2016).

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