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Why is the global governance of plastic failing the oceans?

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ABSTRACT

On some measures, the global governance of plastic is improving. Curbside recycling and community cleanups are increasing. Companies like Toyota, Walmart, and Procter & Gamble are reducing waste to landfill. And all around the world, as research consolidates and activism intensifies, towns, cities, and legislatures are banning some uses of plastic, such as for grocery bags and as microbeads in consumer products. Yet the amount of plastic flowing into the oceans is on track to double from 2010 to 2025. Why? Partly, the dispersal, durability, and mobility of microplastics make governance extremely hard. At the same time, the difficulty of governing plastic has been rising as production accelerates, consumption globalizes, pollution sources diversify, and international trade obscures responsibility. As pressures and complexities mount, the global governance of plastic – characterized by fragmented authority, weak international institutions, uneven regulations, uncoordinated policies, and business-oriented solutions – is failing to rein in marine plastic pollution. In large part, as this article demonstrates, this governance landscape reflects industry efforts to resist government regulation, deflect accountability, and thwart critics, coupled with industry advocacy of corporate self-regulation and consumer responsibility as principles of governance. These findings confirm the need for more hard-hitting domestic regulation of industry as well as an international plastics treaty to scale up local reforms.

1. Introduction

The number of articles on the topic of marine plastic pollution published per year in the Web of Science core collection quadrupled from 50 in 2013 to 200 in 2017 (search on 16 March 2018). Taken together, this research is revealing a mounting global environmental crisis with no signs of abatement (e.g., [Jambeck et al., 2015](#); [Boucher and Friot, 2017](#); [Lebreton et al., 2017](#); [Geyer et al., 2017](#); [Schneider et al., 2018](#)). If trends continue, the amount of plastic making its way into the oceans is set to double from 2010 to 2025, rising from approximately 8 million metric tons in 2010 to 9 million in 2015 to 16 million in 2025 ([Jambeck et al., 2015](#); [Mortillaro, 2017](#)). Why is the global governance of plastic failing to prevent marine pollution from escalating?

Partly, the properties of plastic itself, including its longevity, toxicity, malleability, and propensity to disintegrate into microplastics, make governance particularly challenging. The difficulty of governing the environmental consequences of the ‘plastics industry’ has also been growing over the past two decades as economic stakes rise and as markets, sales, and product offerings expand. The profits for the chemical, oil, and speciality corporations that are manufacturing plastic are rising quickly; but so are the profits from packaging, selling, and using ‘plastic products’, with plastic now integral to generating profits from consumer goods, food retailing, building and construction,

transportation, electronics, agriculture, textiles, and automobiles, among others. As this plastics industry has grown in size and power, so have the volumes and types of plastic. In this context, the sources of pollution have diffused across countries, sectors, and products. Trading arrangements have become progressively more complicated. And plastic production and consumption have gone up quickly across countries with relatively low environmental standards.

The current global architecture for governing marine plastic pollution is not up to this challenge. Governance is fragmented across jurisdictions, sectors, and product lines. There is little policy coordination across states, with international institutions functioning as little more than dialogue forums. National and subnational policies are highly uneven, with loopholes and erratic implementation. Standards are inconsistent and systemic illegalities are common across much of the world. There are a few examples of this bottom-up, ad hoc governance reducing some forms of marine plastic pollution on a global scale, notably from plastic grocery bags and microbead products ([Xanthos and Walker, 2017](#); [Dauvergne, 2018](#)). Yet fragmented and uneven governance of plastic is also causing a great deal of harm, distancing large amounts of waste (both physically and psychologically) from well-off consumers ([Clapp, 2002](#)), deflecting the environmental costs into low-standard jurisdictions and the global commons, and contributing to strikingly high levels of marine pollution from some countries, particularly in Asia.

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This governance landscape, I argue, is not an accident of history, but reflects ongoing industry resistance to state regulation and community activism within every country – a resistance that is intensifying as the economic and political power of the plastics industry continues to rise (Clapp, 2012). It also reflects, I further argue, successful industry advocacy of insipid, business-friendly governance interventions under the guise of corporate sustainability, contributing to an overconfidence in the value of individual responsibility and corporate self-governance as management principles (Maniates, 2001; Dauvergne and Lister, 2012). My goal of this analysis is to advance the social science research on the causes and consequences of marine plastic pollution, which so far has seen only a handful of publications (e.g., Graney, 2016; Pettipas et al., 2016; Xanthos and Walker, 2017; Vince and Hardesty, 2017; Dauvergne, 2018). Theoretically, the analysis confirms the central role of fragmented and uneven governance for explaining the broad failure of ocean governance (Young et al., 2007; Biermann et al., 2009; DeSombre, 2018), while advancing the particular understanding of how and why industry is constructing this form of governance (Clapp, 2012). Pragmatically, it demonstrates the need – and value – of regulating plastic more rigorously, including, as others are now calling for, negotiating an international treaty to set timelines and targets to reduce marine plastic pollution (Simon, 2016; Borrelle et al., 2017; Worm et al., 2017; Raubenheimer and McIlgorm, 2017).

My analysis unfolds over seven further sections. To set the stage for the analysis of why the governance of marine plastic pollution is failing, Section 2 defines governance and underscores the importance of the fragmentation of governance for the failure to prevent industry from depleting and polluting the oceans more generally. Section 3 documents the crisis of marine plastic pollution, highlighting the unique governance challenges arising from the properties and uses of plastic itself. Section 4 adds another layer of understanding of why this crisis is escalating, documenting the growing complexity of marine governance arising from the globalization of plastic production, trade, retailing, and waste recycling. Section 5 sketches the highly uneven nature of plastic governance across jurisdictions, analyzing in particular the role of industry is resisting, fragmenting, and weakening state regulations for microbeads and plastic bags – especially revealing cases as industry stakes are relatively low and activism is comparatively intense. Sections 6 and 7 build on this analysis to explore how industry advocacy of consumer responsibility and corporate self-regulation is shifting governance towards business-oriented solutions. Overall, as I conclude in Section 8, the findings in this article demonstrate the necessity of much stronger international coordination and domestic measures to reduce marine plastic pollution.

2. The failure of ocean governance

Governance can be understood broadly as the steering of practices by public and private authorities, including through international institutions, state legislation, nongovernmental standards, corporate codes of conduct, and societal norms of right and wrong. Study after study has found that the governance of oceans is failing to protect marine life on a global scale. This failure is true for commercial fishing and resource extraction (e.g., Lobo and Jacques, 2017; DeSombre and Barkin, 2011). It is the case for ocean conservation despite the formal designation of more than 13,600 marine protected areas (Halpern, 2014; Fox et al., 2014; Edgar et al., 2014; de Morais et al., 2015). And it is true for pollution of coastal waters and the high seas (Eriksen et al., 2014; Jambeck et al., 2015; Jamieson et al., 2017). There are certainly many examples of the local management of marine resources improving over time (Webster, 2009; Blasiak et al., 2016). Yet most scholars of ocean governance would agree with Young et al. (2007, p. 22) that ‘the escalating crisis in marine ecosystems – from biodiversity losses and transformed food webs to marine pollution and warming waters – is in large part a failure of governance.’

Although the degree of failure varies across issues and locations,

scholars frequently point to the fragmentation of governance across national and local jurisdictions as a core reason for the overall failure of ocean governance. Such governance has tended to prioritize short-sighted business and political interests over the regenerative needs and absorptive capacity of marine systems (Young et al., 2007). International rules and institutions of ocean governance, meanwhile, have struggled to fill in the patchwork of ocean governance (Berkman and Young, 2009). Regulatory gaps in global environmental governance more generally have also made it fairly easy for states and firms to evade responsibility as well as deflect the ecological costs of production and consumption, such as by trawling the high seas for seafood or by shipping recyclables overseas (Lobo and Jacques, 2017; Clapp, 2002).

Certainly, over the past fifty years international agreements have reduced some threats to the oceans – such as from oil spills, tanker discharge, and the dumping of waste offshore (M’Gonigle and Zacher, 1979; Mitchell, 1994). There is also no question that scientific advances and knowledge networks have shifted societal discourses and nudged states towards negotiating agreements to protect the oceans – what, in the case of the Mediterranean Action Plan (1972–87), Haas (1990) described as the power of ‘epistemic communities’. There are also many examples of nongovernmental ocean advocacy influencing public opinion, legislation, consumer demand, and corporate discourses. Ringius (2000) documents the influence of nongovernmental organizations (NGOs) to stop the dumping of radioactive waste into the high seas. Epstein (2008) shows how activists altered the global discourse against whale hunting by reimagining whales as majestic and sentient beings. Dauvergne and Neville (2011) demonstrate the power of activism to disrupt commercial sealing in Canada. Gulbrandsen (2009) and Auld (2014) reveal the role of NGOs in establishing international certification standards for seafood, most notably the Marine Stewardship Council. Alger and Dauvergne (2017a, 2017b) document the influence of the Pew Charitable Trusts, the National Geographic Society, and Conservation International in convincing countries as diverse as Australia, Chile, the Cook Islands, Kiribati, the United Kingdom, and the United States to establish large (above 200,000 sq km) marine protected areas in the Pacific and Atlantic Oceans.

Improvements to ocean governance, however, have tended to be the exception rather than the rule. Most of the progress, moreover, has occurred where commercial and community resistance to reforms have been relatively low and political gains and emotional stakes have been high. Given this, while acknowledging these governance gains, the general consensus of ocean governance scholarship is that current international instruments, state policies, nonstate rules, and consumer norms are simply not strong enough, nor comprehensive enough, to protect and conserve marine ecologies at a global scale (DeSombre, 2018). This is especially true for the threat of marine plastic pollution.

3. The crisis of marine plastic pollution

Between 60–90% of marine litter is plastic, with over 9 million metric tons of plastic flowing into the oceans in 2015 – roughly equal to 5–6 grocery bags of plastic for each foot of seashore (Jambeck, as interviewed by Mortillaro, 2017; see also Jambeck et al., 2015). The vast array of sources of pollution complicates global governance. The main source of this plastic pollution is litter from consumer packaging and products, a category that includes beverage bottles, shopping bags, bottle caps, food containers, straws, cigarette butts, and cling wrap. Lost and discarded fishing gear is another significant source of plastic waste.

The durability, photodegradation, and microscopic size of plastic waste further complicate governance. Plastic can last for centuries, disintegrating especially slowly in the cold, dark depths of the oceans. Over time, however, it does tend to break apart into pieces less than 5 mm in size, producing what are called ‘secondary microplastics’. ‘Primary microplastics,’ defined as pieces already under 5 mm in diameter when entering the oceans, are also a rising source of marine

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