

Blunt Instruments, Glass Slippers, and Unicorns: Ocean Governance in a Climate-Changed Gulf of Maine

by Susan E. Farady

There has never been a shortage of controversies about sustainable use of the rich coastal and marine resources in the Gulf of Maine, whether it's fishery management, expansion of aquaculture, or shoreline access. The governance system we rely on to manage uses and resolve conflicts among users is one that has evolved over many years. The publication of *Mare Liberum* in the 1600s articulated the concept of "high seas" that belong to no one and are open to all nations for commerce. Shortly thereafter, a coastal nation's right to defend itself was defined, extending three miles from shore (the range of a cannon shot from land in the 1700s), the origin of today's three-mile state water boundary. Fast forward a few hundred years to World War II. Innovations in technology to prosecute the war effort produced bigger vessels with bigger engines, submarines, and sonar and radar. These new technologies led to dramatic changes in how postwar maritime activities such as fishing, shipping, and energy production were conducted. Fishing vessels became bigger, could venture further offshore, process and freeze their catch at sea, and fish with larger gear. Commercial shipping similarly could go farther and faster. Our increased appetites for petroleum products ashore and at sea led to the development of the offshore oil and gas industry.

By the 1960s and 1970s, it was clear that human ability to use and affect marine resources needed to be managed.

NOAA was established in 1970, the first time a US government agency was dedicated to coastal and marine resource management. Congress passed laws such as the Clean Water Act, Magnuson-Stevens Act, Marine Mammal Protection Act, and the National Environmental Policy Act, establishing new requirements and processes to guide management decisions.

This governance structure was not designed to be comprehensive and responsive to the challenges we face today. The limits of laws and management entities singularly focused on specific uses (such as commercial fishing or oil and gas extraction) or specific species (such as marine mammals) are increasingly apparent. This siloed system does not reflect the interconnected nature of the marine ecosystem, nor does it lend itself to considering cumulative impacts of all uses and the interactions between different uses. Implementation of this system often results in the application of blunt legal instruments, effective in achieving singular narrow goals but unable to function in a more nuanced, comprehensive fashion. As conditions and uses change, the limits of this governance system become more and more apparent.

In the 2000s, calls for ocean governance reform came from two national-level ocean commissions as well as state-led efforts in Massachusetts and Rhode Island. Our very first National

Ocean Policy was proclaimed by President Obama's 2010 executive order. Massachusetts and Rhode Island embarked on comprehensive ocean planning efforts to help site multiple activities off their shores. These initiatives all called for ecosystem-based management and increased agency coordination and ocean planning to include the full range of ocean uses and users, so management better reflected interconnected marine ecosystems and interactions between different uses. Additionally, regional ocean planning efforts were conducted in the New England and mid-Atlantic regions, largely in response to proposed offshore wind energy projects. These regional plans concluded in 2016, with enhanced interactions among agencies and stakeholders, as well as established portals where data from all agencies exist in one place to facilitate comprehensive planning. Notably, none of these efforts replaced the patchwork of single-sector federal laws.

In the meantime, management decisions about marine resources in the Gulf of Maine have grown increasingly complicated, and strain the current governance system. Rapidly changing climate conditions have led to marine species on the move, changing ecosystem structures, and new oceanographic conditions. Commercial fisheries, aquaculture operations and endangered species protection are all activities affected by the changing Gulf of Maine. Coastal communities are confronting rising sea levels, impacts of increasingly intense storms, and changing coastal economies. The current leasing process for offshore wind energy forces us to confront new dilemmas, as we face the urgent need to develop new energy

sources to reduce greenhouse gas emissions and mitigate climate change, while considering how this new use fits into existing uses and current conditions. How do we determine where it may be appropriate to site offshore wind? How might current uses coexist with a new industry? How can impacts of offshore wind be mitigated? What opportunities are available to changing coastal communities in this new industry? Making management decisions under our current governance system in this new world increasingly seems like the stepsisters trying to squeeze into Cinderella's glass slippers: the shoe doesn't fit well, if at all.

An ocean governance system should ideally reflect the interconnected nature of the ecosystem and intersections among uses and impacts. Such a system would be comprehensive in nature, replacing the constraints of single-sector management. It would have a decision-making process that allows managers and stakeholders to consider the cumulative impacts of all uses, and overtly consider the trade-offs in how and where uses are permitted and in what areas and species are protected. Management would be collaborative, transparent, and inclusive of community as well as scientific knowledge.

Such a management unicorn doesn't exist, but the ocean-planning experience of Massachusetts and Rhode Island and the structure provided by regional planning bodies illustrate the potential to get past blunt instruments and ill-fitting glass slippers and create a governance system that reflects the ecosystem and improves processes and outcomes for managers and stakeholders alike. In the midst of polarized debates on issues such as right whale conservation or offshore wind energy, it's worthwhile to also consider that these decisions are being made under the constructs of a governance regime that makes it difficult to even have the right

conversations about what's at stake. As conditions in the Gulf of Maine change, and management decisions become more complex, we should consider how our governance system needs to be reformed to match the tasks before us. We need a governance structure that lets us apply a range of information towards achieving long-term goals, includes all stakeholders, and helps us envision the future of a changed Gulf of Maine.

Susan Farady is an associate professor at the University of New England in Biddeford, Maine, where she teaches courses in ocean governance, marine pollution, aquaculture policy, and ocean and coastal law. Her research includes the implications of climate change on US fishery management, marine spatial planning, interdisciplinary curriculum design, and strategies to address marine microplastic pollution.