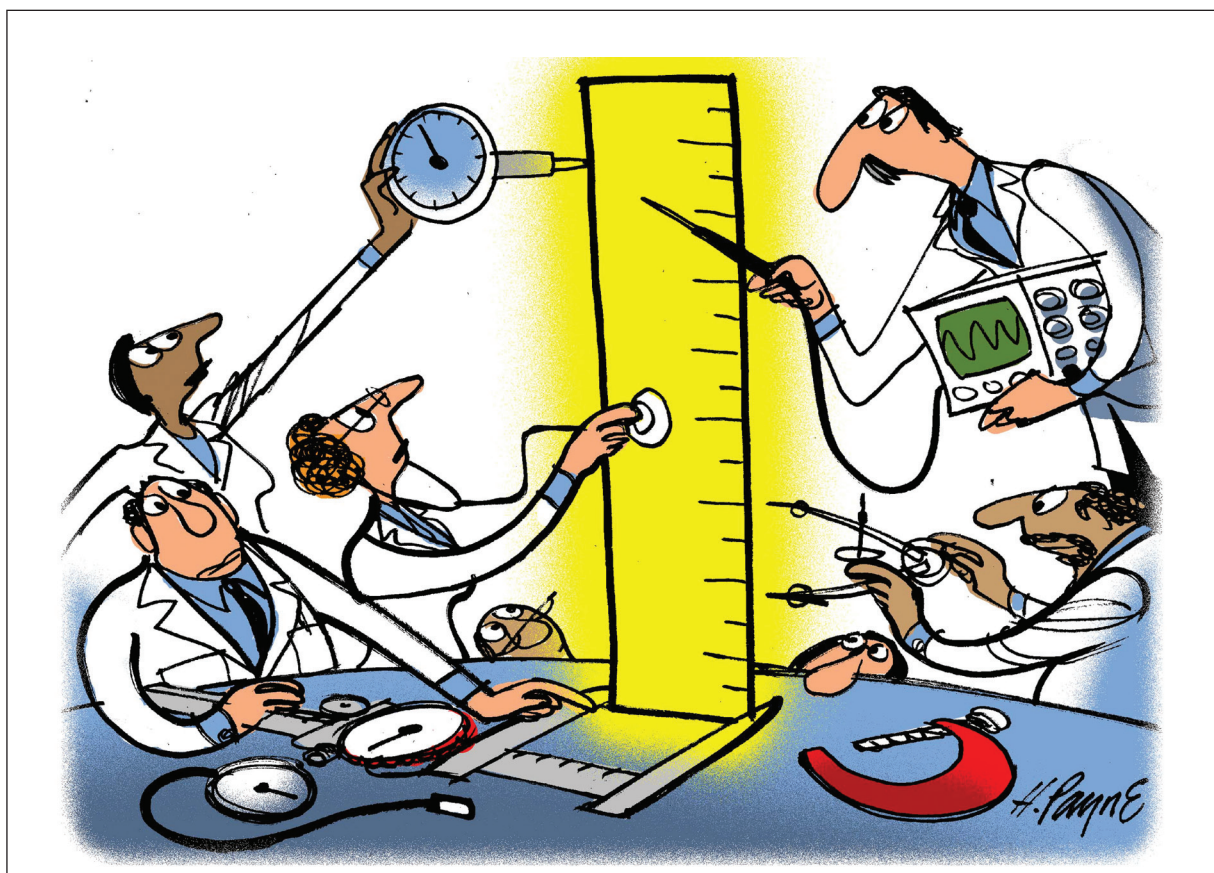


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## Evaluating Rules and How We Measure Their Effects

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# The Clean Ocean Act

*It's the Clean Water Act, passed in 1972 and still our best legal tool for limiting pollution entering the marine environment. When reading the statute with an eye toward the sea, the first step is overcoming the law's system of limits and boundaries*



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**T**he solution to pollution is dilution, or so the saying goes. What better place to absorb radioactive wastes, oil and its dispersants, runoff from cities and farms, atmospheric carbon dioxide, toxic loads from industry, sewage from urban areas, and novel compounds with often unknown biological and ecological effects from millions of sources than the largest waterbody on Earth? The fallacy in thinking that the ocean is so huge it can eliminate the problem of pollution is not unlike the notion that the ocean's fish stocks are so large that we could never damage them. Today, with 50 percent of stocks worldwide fully exploited and another 32 percent overexploited or depleted, we recognize that the human population is large enough to cause substantial harm throughout the marine environment.

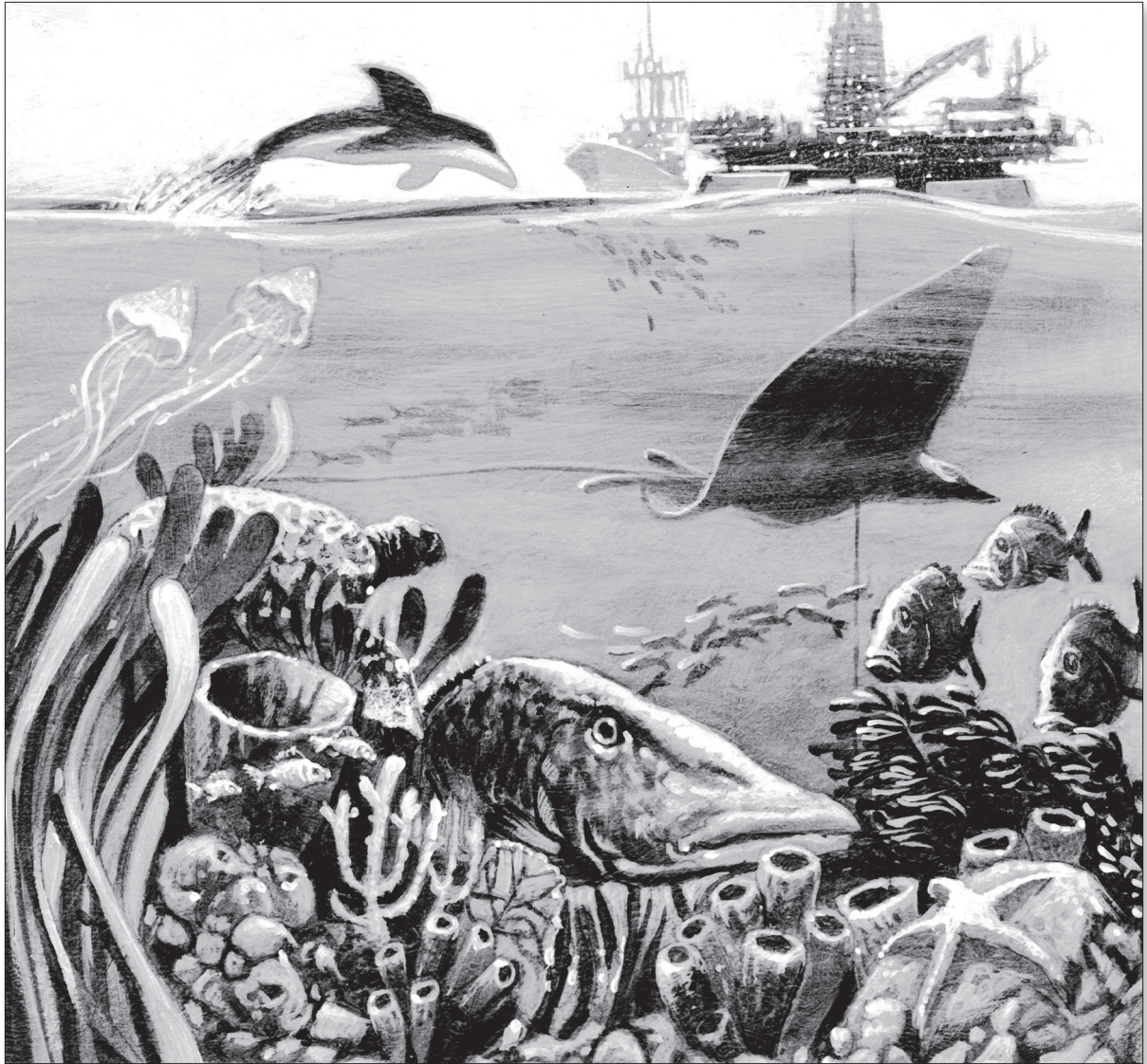
The same is true in terms of pollution. There is a growing list of impacts spanning entire ocean basins, like the recent tragedy in the Gulf of Mexico. Whether intentional or not, the ocean is the ultimate receiving water for land-based and at-sea pollution. This includes nutrients from terrestrial runoff, which cause harmful algal blooms and dead zones covering thousands of square miles; discharges from shipping, including untreated human waste; carbon dioxide emissions, which are absorbed by the oceans, acidifying them and damaging corals and other species; and plastic particles from trash, forming oceanic messes the size of Texas.

These problems are making the oceans, areas of huge economic importance and a part of our cultur-

al heritage, impoverished and imperilled. In 2010, President Obama responded to this growing crisis by declaring that it is national policy to “protect, maintain, and restore the health and biological diversity of ocean, coastal, and Great Lakes ecosystems and resources.” This Ocean Policy Executive Order establishes a National Ocean Council. Under its oversight all federal agencies are commanded to implement the policy and accompanying stewardship principles and priority objectives; participate in a coastal and marine spatial planning process; and comply with certified coastal and marine spatial plans “to the fullest extent consistent with applicable law.” The executive order incorporates by reference the detailed final recommendations developed by the precursor Inter-agency Ocean Policy Task Force.

This begs the question: what “applicable law” do we have to address pollution in order to “protect, maintain, and restore” this resource? Perhaps that language, reflected in an earlier statute, suggests an answer. This article examines the potential role of the Clean Water Act to address ocean water quality, an important — if circumscribed — tool. We don't discuss just the well known system that applies to lakes and streams but also many of those same provisions as they apply to the ocean itself, including tidal waters and estuaries, which are not as well known. While the CWA has its limitations in fresh water, these unfortunately pale in comparison to the constraints of the application of the act in the ocean both because of limited jurisdiction (see figure) and the failure of federal and state agencies





to fully implement provisions applicable to the marine environment. Herein, we will view the CWA requirements in the various ocean zones, identify ways to improve implementation of the existing framework, and consider how the CWA could be amended to create a more comprehensive ocean water quality management framework.

**W**hen reading the CWA with an eye toward the sea, the first step is recognizing that the act has its own system of jurisdictional boundaries.

Three types of marine waters are of key importance to understanding CWA application. First,

*navigable waters* includes “waters of the United States” (or internal waters, outside our main scope) and the territorial seas, which are explicitly defined by the act and limited to the waters within three miles of shore. Second, the *contiguous zone* includes waters from three to 12 miles from shore in accordance with the 1958 law of the sea treaty (a treaty that is now superseded by the 1982 United Nations Convention on the Law of the Sea, which changed the boundaries to a 12-mile territorial sea and a contiguous zone that extends from 12 to 24 miles offshore). Third, the *ocean* includes all waters beyond the contiguous zone (under U.S. jurisdiction or otherwise). The jurisdictional zones defined by the CWA do not align directly with current international law boundaries or U.S. state

## Clean Water Act and the Ocean

Internal waters (state)		3–200 miles (federal)		200+ miles (high seas)
Navigable waters		Contiguous zone (3–12 miles)	Ocean (12+)	
Waters of the United States	Territorial seas (0–3 miles)			
Sec. 301 (effluent limitations)				
Sec. 301 (effluent limitations)				
Sec. 303(a) (water quality standards)				
	Sec. 303(i) (coastal WQS)			
Sec. 303(d) (TMDLs)				
Sec. 311 (liability scheme)				
Sec. 319 (nonpoint source management)				
Sec. 402 (NPDES, state management)		Sec. 402 (NPDES, EPA management)		
Sec. 312(o) (recreational vessel management practices)				
Sec. 403 (ocean discharge criteria)				
Sec. 404 (dredge and fill)**				
	406 (coastal monitoring)			
Sec. 312(b) (marine sanitation devices)				
Sec. 312(f) (sewage discharge prohibition)				

**KEY**

- General CWA definitions \*For coastal water WQS & monitoring, limited to areas of contact (swimming, bathing, surfing, etc.)
- State delegated authority\*
- Federal agency is primary authority

\*\*Few states actually use this delegated authority, leaving it to the Army Corps of Engineers to implement.

and federal boundaries, much less common sense definitions. For instance, this article will use the word ocean to apply to all three zones, except where specifically noted.

Complicating matters further, we need to explore how the marine water designations apply to specific provisions and key CWA management programs, as well as understanding limitations that are particularly relevant to the marine environment.

Here is the good news. Two key elements of the CWA apply in all waters in all three zones — effluent limitations, which establish discharge limits based on available control technology and water quality-based standards, and the National Pollutant Discharge Elimination System, which uses permits to achieve water quality objectives by requiring dischargers to meet effluent limitations and other conditions. This means that EPA and the states have the ability to create pollution limits and point source permitting programs that, when combined, apply in all marine waters. Furthermore, EPA has additional explicit authority to create “ocean discharge criteria” for point source discharges in all marine areas. Unfortunately, EPA implemented

this CWA provision by developing a few pages of vague criteria in 1983, and despite attempts, there have been no updates since then.

A major omission in the system of marine point source pollution authority is pollution that comes from vessels. First, the CWA specifically excludes sewage (but not other discharges, as a 2008 Ninth Circuit decision makes clear) from vessels, and all discharges released as part of the normal operations of vessels of the U.S. armed forces. This limitation is at least tempered by the fact that the CWA requires EPA and the Coast Guard to regulate sewage from ships by requiring marine sanitation devices and allows states the authority to create “no discharge zones” where sewage releases are prohibited in navigable waters. Beyond three miles, the CWA marine sanitation device mandate does not explicitly apply.

Until recently, EPA did not regulate vessels at all as point sources, despite the fact that the definition of point source includes “vessel or other floating craft,” and many cruise ships are as large as small cities. It was only after the Ninth Circuit ruled in 2008 that EPA must regulate discharges, other than sewage, from vessels that the agency undertook this task. And in quick response to this ruling, Congress

passed, and President George W. Bush signed, the euphemistically titled Clean Boating Act, which excludes recreational vessels from the requirements and instead mandates the adoption of best management practices.

Another piece of good news — the CWA liability scheme for accidental discharges of hazardous or oily substances applies in all U.S. fresh water and that part of the marine environment extending from internal waters to the limits of the areas designated under the Outer Continental Shelf Lands Act, or 200 nautical miles from shore. Also, while the act's dredge and fill provisions have limited reach and apply only to navigable waters (out to three miles from shore), this provision is supplemented by the Rivers and Harbors Act, which enables dredge and fill regulation out to the limits of U.S. jurisdiction (200 miles).

This is where the broad reach of the CWA ends. Water Quality Standards, Total Maximum Daily Load limits, and nonpoint source management are required only for navigable waters. Since the ocean is the ultimate destination, these provisions are still important for the overall marine environment and particularly for the navigable waters zone. Water Quality Standards provide a means of determining whether waters are healthy or impaired. In particular, these standards consist of three elements: designated uses; criteria to protect the designated uses; and provisions to support antidegradation requirements. If technology-based NPDES permit limits fail to meet applicable WQSs, the permits must be revised to incorporate them. If effluent limitations are not stringent enough to achieve the applicable water WQSs, states must develop TMDLs, which provide a mechanism for bringing impaired waters into compliance with standards. Specifically, TMDLs are developed for waterbodies that are impaired due to one or more pollutants. They are planning documents that provide an analysis of the sources of pollution, and create a budget of the amount of pollutant various sources can contribute to the total allowable load. Pollutant sources include point sources, nonpoint sources, and natural sources. While the TMDL provisions of the act themselves do not include specific implementation mechanisms, they do trigger other provisions. States must take nonpoint source pollution into account when setting TMDLs and adjust point source discharge permits accordingly to ensure that the sum total meets the applicable WQS.

So what do we do to improve the Clean Water Act's application in the marine environment? Three things: develop new ocean discharge criteria; apply the TMDL program to the oceans; and revitalize coastal nonpoint source programs.

In addition to the NPDES permitting program laid out in CWA Section 402, Section 403 sets forth additional requirements for discharges to the territorial sea, contiguous zone, and ocean, and calls for EPA to establish discharge criteria applicable to all three zones. In accordance with this section, EPA may permit a point source discharge to these waters only if it determines that the discharge will not result in "unreasonable degradation of the marine environment." Unreasonable degradation is defined by regulation as significant adverse changes in ecosystem diversity and productivity and in the stability of the biological community within the area of discharge and surrounding biological communities; threat to human health through direct exposure to pollutants or through consumption of exposed aquatic organisms; or loss of esthetic, recreational, scientific or economic values that is unreasonable in relation to the benefit derived from the discharge.

EPA determines whether a discharge will cause unreasonable degradation of the marine environment based on 10 factors set forth in the regulation. If the agency determines that the discharge will not cause unreasonable degradation after any necessary permit conditions have been applied, it may issue the permit. Conversely, if the agency determines that the discharge will cause unreasonable degradation even with permit conditions, or that there is insufficient information to determine whether unreasonable degradation will occur, it may not permit the discharge. Notably, if the discharge complies with state water quality standards for that pollutant, it is presumed not to cause unreasonable degradation of the marine environment.

Despite an attempt in the early 2000s, EPA has not updated ocean discharge criteria since 1983, and as currently written, the criteria provide limited guidance for dischargers. Therefore, the ocean discharge criteria could be a target for improving CWA implementation in the ocean.

The rule under development in 2000, which was withdrawn, included elements that still resonate today. This would start with defining use (the CWA uses "use" as a key determinant in setting standards) as "healthy ocean waters," which applies from the three-mile contiguous zone out to 200 miles. Next,



create discharge criteria based on the above use. Finally, establish “special ocean sites” that would limit new discharges and would encourage development of “no discharge zones.” As the nation moves toward coastal and marine spatial planning as called for in the Ocean Policy Executive Order, the ocean discharge criteria could provide a mechanism to develop spatially explicit discharge criteria for the oceans.

Second, EPA and states could expand TMDL development in ocean areas. To date, there has been limited focus by states and EPA to fully develop ocean water quality standards, identify impaired ocean waters, and develop large marine ecosystem-scale TMDLs. The agency could update or develop additional ocean-specific guidance or regulations to encourage and facilitate the development of more comprehensive ocean water quality standards and TMDL programs, including the development of large marine ecosystem TMDLs. Finally, states and EPA could focus on stopping pollution in “threatened waters” to drive a more proactive and prevention-based response.

While terrestrial watershed-based TMDLs should address many of the same problems that would be identified in a large marine ecosystem TMDL, some impairments may be better characterized by a regional ocean assessment. For example, the cumulative effects of plastic pollution entering the ocean from land-based sources have created impacts on the scale of entire countries. This could be better understood and appreciated if a single TMDL were developed to analyze the problem and consider potential region-wide solutions. Further, ocean TMDLs could address larger scale challenges that the current focus on inland waterbodies overlooks. For example, ocean TMDLs could shed light on the impacts of ocean noise pollution (which affects marine mammals), toxic pollutants from antifouling agents used to keep ships free from barnacles and other encrusting organisms, or invasive species traveling in ballast water are specifically ocean issues, which would not be addressed by a focus on terrestrial waterbodies alone.

**I**mproving ocean WQs, identifying impaired waters, and developing ocean TMDLs in state waters is well within the realm of what the CWA provisions intend. However, taking such steps in ocean areas beyond the three-mile boundary requires overcoming one major hurdle in the language of the act. In Section 303, Congress specifically calls upon states to develop TMDLs for waters within state boundaries. This would mean

up to three miles from shore for most states (Texas and the west coast of Florida have state boundaries that extend to nine miles from shore). While at first glance, this could be perceived as a road block, Robin Kundis Craig and Sarah Miller in an article published in 2001 explain the broad authority the CWA grants EPA to achieve the goals of the act and demonstrate that other provisions of the CWA give EPA the authority it needs to expand TMDL development in the ocean. Specifically, Craig and Miller point to Section 304, requiring EPA to create criteria for water quality based on the presence of pollutants in “any body of water”; develop and publish information “on the factors needed to restore and maintain the chemical, physical, and biological integrity of all navigable waters, ground waters, waters of the contiguous zone, and the oceans”; and calling for EPA to publish information on factors necessary for protecting and propagating fish and wildlife “in and on the water.”

Third, and linked to the TMDL recommendations, EPA could revitalize and expand efforts to use the non-point source program under CWA Section 319 to address ocean challenges. Instead of creating a regulatory program for nonpoint pollution, the CWA establishes an incentive-based system. In particular, Section 319 enables states, territories, and tribes to obtain grant money for nonpoint activities. All states have approved programs, and EPA provides around \$200 million annually in grant money under this system. As the 2003 EPA guidance and grant guidelines for Section 319 point out, the nonpoint source program largely focuses on waters identified as impaired under Section 303(d) of the CWA. However, very few TMDLs exist that relate to the ocean, and those that do typically target bays, estuaries, and river mouths — a recent example being the Chesapeake Bay TMDL — rather than open ocean waters or large marine ecosystems. The need to address nonpoint pollution in coastal waters throughout the ecosystem, and the fact that the CWA Section 319 nonpoint source program specifically targets waterbodies designated as impaired, provides added reasons for reviewing the condition of coastal waters for impairment and developing ocean TMDLs.

As agencies wrestle with how to achieve the new national ocean executive order’s charge to “protect, maintain, and restore the health and biological diversity of ocean, coastal, and Great Lakes ecosystems and resources,” they should look to our Clean Ocean Act. It provides core mechanisms to ensure the biological, physical, and chemical integrity of our nations’ largest waterbody, the ocean. •