Using The Clean Water Act To Protect Our Ocean's Biodiversity

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by Kate Halloran*

National legislation addressing the effects of climate change on our ecosystem has failed to materialize, but environmental advocates have sought other avenues to jumpstart the process. The Center for Biological Diversity, for example, has advanced the Clean Water Act as a vehicle to address the deleterious impact of ocean acidification on marine organisms. Ocean acidification, which some scientists argue has been caused by anthropogenic climate change, alters the chemistry of ocean water and threatens marine biodiversity. As oceans absorb carbon dioxide, pH levels decrease. The decreased pH levels inhibit the ability of many marine organisms, such as coral and plankton, to form protective shells integral to their survival. Loss of these organisms would echo throughout the marine ecosystem. The integrity of the ocean ecosystem is significant not only from an environmental standpoint, but also from an economic perspective. If marine biodiversity suffers irreversible damage from ocean acidification, the effects would ripple throughout the commercial realm, impacting the fishing and tourism industries.

In 2007, the Center for Biological Diversity filed a petition with the United States Environmental Protection Agency (“EPA”) requesting an update to existing water quality criteria under section 304(a) of the Clean Water Act (“CWA”). The Center for Biological Diversity argued that the pH water quality criteria required revision in light of new scientific data on the impacts of ocean acidification. EPA agreed to evaluate these concerns and published a notice in the Federal Register requesting scientific data on the issue. Despite this agreement, EPA approved a list of impaired waters in Washington that ignored ocean acidification’s impacts on the state’s coastal waters. The Center for Biological Diversity responded with a lawsuit against EPA. Now, as part of a legal settlement, EPA has issued a notice in the Federal Register soliciting comments on how to address ocean acidification through listing of impaired waters under section 303(d) of the CWA.

The efforts of the Center for Biological Diversity are an important step forward, but the question remains how effective the CWA would be in protecting marine biodiversity from ocean acidification. Section 403(a)(2)(B) of the CWA requires that water quality criteria address “the factors necessary for the protection and propagation of shellfish, fish, and wildlife...” Once section 304(a) water quality criteria are determined, those criteria must be enforced. Section 303(d) is primarily a mechanism for implementing water quality criteria: first, a state compiles a list of waters within its jurisdiction that fail to meet the criteria; and second, the state establishes limits for discharges of pollutants affecting each impaired water body through Total Maximum Daily Loads (“TMDLs”). TMDLs generally are effective for managing point sources, where discharge of a particular pollutant is easily traceable and quantifiable. TMDLs for non-point sources present an obstacle for ensuring compliance and enforcement, an especially important consideration when limiting carbon dioxide emissions in ocean waters.

One challenge is determining if and how much non-point sources of carbon dioxide emissions are impacting a coastal area. If that impact can be quantified, there is still the difficulty of attributing those emissions in a way that would promote successful compliance with TMDLs. Currently, TMDLs for non-point sources “are implemented through a wide variety of State, local, and Federal programs, which are primarily voluntary or incentive-based.”

Moreover, the geography of the ocean calls for an integrated system of managing ocean acidification. Coastal waters are shared among different states that may have varying water quality criteria, impaired waters lists, and TMDLs. A state only has jurisdiction over its territorial waters, but the reality of managing a vast ecosystem requires cooperation among coastal states to prompt meaningful change.

Another potential issue is regulating carbon dioxide emissions from point sources. Discharges from point sources would require a permit through the National Pollution Discharge Elimination System (“NPDES”). Regulating carbon dioxide discharges into oceans may necessitate developing new NPDES permits that incorporate adjusted water quality criteria for ocean acidification to set effluent limitations for discharges, which could be a lengthy and complex process.

A final obstacle is the CWA’s capacity to regulate airborne carbon dioxide emissions. Airborne carbon dioxide emissions contribute to the problem, but are not a conventional source of water pollution. While it may be possible to regulate airborne emissions under the CWA, the efficacy of doing so is questionable.

There is no doubt that ocean acidification is a time-sensitive issue endangering the health of our oceans and marine life. The prospect of using the CWA to counteract ocean acidification has focused attention on this often overlooked problem, but is not without its drawbacks. The challenges of implementing these changes serve as a reminder that ocean acidification must be attacked from more than one angle in order to maximize the chance of success in protecting marine biodiversity.

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