



Dupont Summit 2016

Science, Technology, and Environmental Policy

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Presentation

“Miles to Go for U.S. Aquatic Resources: Quantifying Integrity to Meet the Clean Water Act Mandate”

The passage of the Clean Water Act of 1972 mandated protection of the chemical, physical, and biological integrity of the Nation’s waters through restoration and maintenance. One mechanism of supporting Clean Water Act reporting, the National Aquatic Resources Survey (NARS) has been described as nationally consistent, scientifically defensible, and first-of-its-kind with a focus on resource-specific surveys, including lakes, rivers, wadeable streams, coastal waters, and wetlands. Results to date have offered a unique perspective on aquatic resource health, with the same methods used in collecting samples for each resource in the same field season at sites identified through a probability-based design, which allows scaling up to estimate resource condition at the national scale. Reports for each resource for the first survey have been released, and across the board national aquatic resources face stressors. Over 40% of rivers and wadeable streams and 20% of the lakes showed high water column nutrient concentrations. In coastal waters, only 36% had a good Water Quality Index, and mercury was detected in fish tissues in many rivers, lakes, and coastal waters. Disturbance occurred frequently within upland transitional zones with lakes showing shoreline habitat alteration (36%), rivers and wadeable streams exhibiting riparian disturbance (20%), and wetlands experiencing surface hardening, vegetation removal, and ditching (~20-25% each). Considering biological community structure, 56% of both lakes (based on plankton) and coastal waters (based on bottom-dwelling macroinvertebrates) exhibited good condition, while only 48% of wetlands (based on vegetation) and 28% of rivers and wadeable streams (based on macroinvertebrates) were in good condition. Further, nearly 25% of rivers and wadeable streams had indicator bacteria at levels above human health thresholds. While the first iteration of the NARS provided baseline condition, results from the next rounds of sampling will inform trends. Now that we have begun to collect nationally relevant and statistically valid scientific data, environmental policy may be needed to address shortcomings in the integrity of national aquatic resources.

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