



Afterword: The State of the Bay



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Putting together a comprehensive picture of the condition of Casco Bay is a difficult project: one CBEP tackles every five years.

One purpose of that periodic effort is simply to gather available information on the condition of Casco Bay, and provide it readily to the watershed's community at large. Another goal is to provide insight to guide future efforts to benefit Casco Bay, its watershed, and the region's human and natural communities. The *State of the Bay* reports also provide the opportunity to highlight successes of CBEP and its many partners.

Several themes emerged from the exercise in 2010.

First, Casco Bay remains largely healthy. The Bay supports a remarkable abundance of fish, birds, and wildlife. The Bay's submerged aquatic vegetation, principally eelgrass

(*Zostera marina*), is widespread, and it appears to be flourishing in areas of suitable habitat throughout most of the Bay. The Bay's lobstermen and clambers continue to ply their trades, generating millions of dollars in economic value to the harvesters, and millions more to associated businesses. The unparalleled beauty of the Bay, and its coastlines and islands support both historic summer communities and robust tourism-based industries. Simply put: the region is a wonderful place to live, and the Bay is a big part of why that is so.

Casco Bay remains one of the healthiest estuaries in the National Estuary Program. Its watershed continues to be predominately forested. Each of its subwatersheds – with the exception of the heavily urbanized Fore River subwatershed, in the heart of the Portland metropolitan area – is more than half forest. Many streams continue to support native fish and invertebrates. The waters of the

upper watershed provide excellent fishing for trout and landlocked salmon. And the forests of the upper watershed protect water quality in Sebago Lake, annually saving the Portland Water District and its rate payers millions in water treatment expenses.

In some ways, the Bay is healthier than it was a generation ago: the Clean Water Act has been beneficial for the watershed. Concentrations of many toxic compounds in the Bay's surface sediments have been declining, largely because environmental regulations have resulted in sharp declines in environmental releases of persistent toxins, from DDT to PCBs to lead. Less untreated, or only minimally treated, human waste is entering the Bay. Hundreds of discharges from shorefront houses have been eliminated. It is (finally) illegal to discharge waste from boats into the Bay. And the region's cities and towns have reduced the volume and number of combined sewer overflows.

But there are problems on the horizon. In June and July, 2010, much of the cove at the mouth of Anthoine Creek, visible from the deck of the Route 88 bridge across the Fore River between Portland and South Portland, was bright green because of an extensive overgrowth of filamentous green algae (principally species of the genus *Ulva*). While quantitative data is lacking, such "green slime" events may be increasing in frequency. If so, they may be an early sign of nutrient over-enrichment within the Bay. Anadromous fish are still blocked from the majority of their historic habit within the watershed, and solutions, where they are even possible, are expensive. Sometimes alarming levels of "toxics of emerging concern" are appearing in the biota of the region. Invasive species in both freshwater and marine environments are increasing. Climate change and associated sea level rise pose significant threats not only to people living around the Bay, but also to the region's natural resources, in ways yet to be completely understood.

While the upper watershed remains largely forested and undeveloped, that is not the case in the lower watershed.

There, especially in the areas along the Interstates 295 and 95 corridors, development has already reached levels likely to reduce water quality, and to have negative effects on ecosystem services. Continued population growth and associated changes in land use – perhaps exacerbated by changes in climate that will make Maine an even more attractive place to live – is likely to increase consumption of natural lands, further reducing availability of ecosystem services, and increasing stresses on Casco Bay. A critical

challenge for the coming decade will be accommodating increasing population without degrading ecosystem services that have been taken for granted by generations of Mainers.

Luckily, the community working in ways large and small on behalf of Casco Bay is growing. Dozens of organizations, hundreds of volunteers, and thousands of individuals are engaged with the meaningful work of improving the quality of our environment. Engineers design and install structures to treat stormwater. Citizens collect data on the water quality and aquatic life of Casco Bay. Kids pick up after their dogs. Volunteers search for invasive aquatic plants in area lakes and streams. Towns hold festivals to celebrate and help preserve their aquatic

heritage. Teachers incorporate watershed-based education into their curricula. Lobstermen continue to notch the tails of lobsters bearing eggs. Fishing enthusiasts survey culverts and dams to see whether they allow for passage of fish. Locally led conservation efforts have better than doubled the area of permanently protected land in the lower watershed – to more than 15,690 acres. Farmers fence their livestock away from streams. And clambers seed local clam flats with spat.

Efforts such as those demonstrate that all residents of the watershed – those whose roots go back generations and those who arrived from away – hold the future of the Bay and its watershed in their actions and choices. In the words of Wendell Berry: "The care of the Earth is our most ancient, and most worthy, and, after all, our most pleasing responsibility."



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