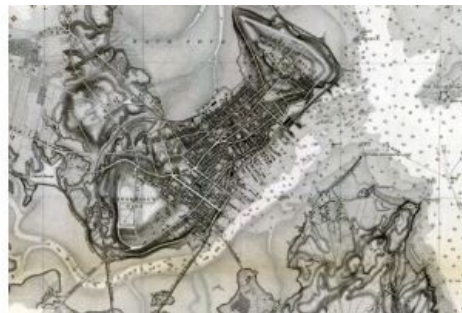


EARLY NATURAL RESOURCE CONSERVATION

Portland Harbour



A progressive spirit was awakening in the United States in the mid-nineteenth century. This movement was notable for emphasis on education reform, prison reform, women's suffrage, the abolitionist movement and an embryonic conservation movement among other concerns. Although the beginnings of the conservation movement are often traced to the establishment of national parks and the sustainable harvesting of forests (echoing the beginnings of seventeenth century efforts in England), an early whisper of the conservation spirit was found in the work of the US Coast Survey in major harbours of our eastern seaboard.

In the early 1850s, the primary and secondary triangulation of the east coast of the United States was progressing up

the coast of Maine and by 1852 had reached the vicinity of Portland, Maine. The triangulation established the latitude/longitude grid for follow-on topographic and hydrographic surveying. The primary triangulation consisting of large triangles and quadrilaterals was observed by Superintendent of the Coast Survey Alexander Dallas Bache and served as the framework for the secondary triangulation that was completed by Charles Boutelle, a multi-talented surveyor who went on to become chief hydrographer of the Union's South Atlantic Blockading Squadron during the Civil War and then Assistant in Charge of the Office of the Coast Survey. The topography was developed by Alexander Wadsworth Longfellow, brother of the famous poet Henry Wadsworth Longfellow. Portland was the family home of the Longfellows and Alexander produced an amazing topographic map that is as much a work of art as technically excellent cartographic product. Lieutenant Maxwell Woodhull, United States Navy, was commanding officer of the Coast Survey schooner Gallatin and in charge of the hydrographic surveying. This talented array combined to not only produce a beautiful chart of Portland Harbour, but also pioneer an early example of the conservation movement in the United States.

Because a railroad had recently been built from Canada to Portland, it had become a deepwater port for Montreal and Quebec. Consequently, Portland anticipated a doubling of its maritime commerce within the following decade. Recognising this, Lieutenant Woodhull wrote to Bache in the fall of 1853: "This harbour I look upon as one of the best on our whole coast, remarkable alike for the facility of ingress and egress, with its convenient and safe anchorage... I have been very particular and minute in sounding the harbour within the breakwater and fronting the city, as I hoped thereby to furnish such facts as would give the citizens of Portland full knowledge of this harbour, and prevent the errors that have been committed in some of our commercial ports, in forcing improvements beyond propriety and a due regard to the safety of the harbour. Already shoals are making, caused, I think, by the irregularity in length of the different piers now existing, behind which eddies are formed...."

Apparently in response to Woodhull's foresight, city leaders invited a commission to study their harbour consisting of Superintendent Alexander Dallas Bache of the Coast Survey; General Joseph Totten, Chief Engineer of the Army Corps of Engineers; and Commander Charles Henry Davis of the Navy. The report of the commission is a landmark in the study of harbour engineering, perhaps not so much for its scientific content, as for its social and philosophical content. This report claimed to mark the first time that a harbour was studied to determine the most effective and least injurious means of improvement prior to construction as opposed to studying a harbour after improvements that caused great harm had been made. Perhaps reflecting the reform-minded spirit of the times, the commission recommended the establishment of a permanent government body vested with the authority to monitor and regulate changes caused by both natural causes and human activity. The commissioners furthermore espoused the then radical viewpoint that private property rights must be subordinated to the 'common good' in order to assure unbridled development did not irreparably harm Portland Harbour.

The primary objective of the commission's study was to recommend an optimum shoreline "beyond which parties should not be allowed to encroach upon the water" so as "to prevent, by timely action, injury to the noble harbour in question." Alexander Longfellow's topographic map showing the shoreline and configuration of piers was used to establish this optimum shoreline. For Bache and his commissioners, "...the case now presented is one of a novel and singularly interesting character. The common occasions for calling together a council of

engineers for harbour improvements have been either to remedy natural defects, to repair the consequences of neglect, to restore a regimen which has been disturbed by natural convulsions, or to remove artificial constructions which have proved injurious to the channels.”

“The Commissioners believe there is not one, in the long list of cases which they have met in the course of their reading, where the engineer has not been required either to undo what has been badly or thoughtlessly done, or else to do something which will supply a positive defect. But the grateful task assigned to this commission is entirely different. It is not called upon to introduce any change into the natural state of things, or to condemn the errors of the past. Having before it a harbour of excellent capacity, with sufficient natural means of self-preservation, it is only expected to show how that capacity may be safely used, and how those means may be maintained unimpaired.”

A second major goal of the study was to generate a plan which would guide the city of Portland in expanding its harbour facilities and help it “escape, in future, those great evils and expenses which have been so frequently incurred by mismanagement or neglect in other places.” In particular, the report referred to other nations as having many examples of mismanaging harbours as the result of rapid and unplanned construction of new facilities in response to an increase in trade.

Thus, the commissioners felt a heavy responsibility to develop a plan which would allow for the increase of commerce while at the same time assuring that the harbour was not damaged. Developing a plan was relatively easy. However: “... it is very evident, the Commissioners would remark that, for the adoption and successful prosecution of any plan of improvement, a controlling supervisory power over the harbours of Portland and all its interior basins must be lodged in competent hands. If no such power exists, action will be always desultory, and sometimes mischievous, as it has been in other places. This is a position which need not be maintained by any long argument. It is quite apparent that owners of lands bordering on the tidal waters will, if permitted, follow out their distinct designs without concert of action, with different objects in view, and with a special regard to those objects, irrespective of any general effect that may result from them. It is equally apparent that, in a case of so much general importance as the present, the rights of private property should not be allowed to interfere with public utility. To enforce this consideration, instances may be mentioned where the exercise of private rights has caused great and almost irremediable injury.... All of them convey the same lesson, which is, that the want of an intelligent and permanent supervising authority, which will examine and regulate in all respects, however detailed or general, any occupation of the water area, is certain to lead to harm, and to produce effects which must be counteracted at some future period with difficulty, hazard, and expense.”

The commission recommended that the city government of Portland take over the supervision of harbour improvements unless the state legislature establish a “... permanent Commission, with authority to direct constructions in all the tidal harbours of the State.”

“In order, however, to guard against misapprehension, it may be well to say that there is no desire to encroach upon, much less to defeat, private and corporate rights. It will be readily understood that, in this question, there are two classes of interests somewhat distinct from each other - public and private. There are also two classes of objects -- special and general. Neither one of the objects or interests need, necessarily, be sacrificed to the other; but it will often demand a sound discrimination to render them compatible with each other. The exercise of such a discrimination properly belongs to a durable and responsible body. And the Commissioners cannot but express the hope and expectation that they are now addressing a body which either is, or will hereafter be, invested with suitable controlling powers, by means of which it can restrain ignorance, allay contention, reconcile jarring interests, and educe the common (which is the highest) good.”

Nearly fifty years after this report was issued, Gifford Pinchot, a leader in the American conservation movement and first chief of the US Forest Service, espoused three principles of conservation:

1. Development: “... the use of natural resources now existing on this continent for the benefit of the people who live here now. There may be just as much waste in neglecting the development and use of certain natural resources as there is their destruction... The development of our natural resources and the fullest use of them for the present generation is the first duty of this generation.”
2. Conservation: “... the prevention of waste in all other directions is a simple matter of good business. The first duty of the human race is to control the earth it lives upon.”
3. Protection of the public interests: “The natural resources must be developed and preserved for the benefit of the many, and not merely for the profit of the few.”

Superintendent Bache, his hydrographers and surveyors, the harbour commission, and the citizens of Portland, Maine, recognised these principles long before Pinchot’s insights into the nature of conservation. Although harbours and their waters are not often thought of as natural resources, their study and protection both by local laws and federal laws were among the first actions taken to protect the natural resources of the United States. Next issue: The study of New York Harbour.