

A Profile of Wetlands Regulation in Coastal Massachusetts Towns: Local Regulatory Activity and the Public Perception of Effects

by

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I. Study Format

This study is attempting to look in detail at both the process and effect of wetlands regulation at the community level in Massachusetts. Work carried out during 1979 in two coastal Massachusetts towns involved 1) a survey of the local and state regulatory practices commonly engaged when construction activity impinges on wetlands areas; and 2) a survey of owners of residential property, both developed and undeveloped, in wetlands areas where this suite of regulations and practices is applicable. The survey of regulations has focused on permit-issuing activities that stem from local management of state and local wetlands protection programs, and on the effects local zoning regulations have on development around wetlands. The property owner survey, which has been the major focus of our research efforts thus far, gathered information of several types, as outlined in Table 1 below.

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Prepared with funds from the Department of Commerce, NOAA Office of Sea Grant, under Grant #NA 79AA-D-00102 and from the Pew Memorial Trust.

particular resource. For example, salt marshes were identified for their value to the protection and importance to land containing shellfish and fisheries as well as storm damage prevention, flood control and water supply. The identified values of salt marshes were then addressed in the regulations. Salt marshes are assumed to be significant to the interests stated above and essentially no salt marshes can be destroyed or altered. Allowable projects in salt marshes include the harvesting of salt hay and the construction over the marsh of an elevated boardwalk.

In addition to salt marshes, coastal beaches, coastal banks, dunes, barrier beaches, land containing shellfish, rocky intertidal shores, anadromous/catadromous fish runs, salt ponds and designated ports are included as coastal resource areas. Each resource area was defined by its physical and/or biological characteristics. Each resource area was then related to the appropriate interest(s) protectable under the law. The relationships were clearly made in the body of the regulations. Establishing prior significance of the coastal resource areas was an important part of the overall concept of the regulations. Each resource area can not be assessed in advance of development.

An individual wanting to construct a home on land within 100 feet of an eroding coastal bank would require and be given an Order of Conditions possibly permitting the project but including the condition:

"No coastal engineering structure such as a bulkhead, revetment or seawall...will be permitted...in the future to protect the project allowed by this Order."

This language is included on all projects applied for subsequent to the effective date of the regulations. It is an example of the kind of protection being made to the coastal resource. It puts the public on notice that the important sediment suppling function of the coastal bank will be maintained.

CONCLUSIONS

The Coastal Regulations are a significant step toward protecting the remaining coastal wetlands of Massachusetts. They provide a model for other states in assessing their own goals for wetlands protection. Adjudicatory cases presently being litigated are offering a positive enforcement powers the supportive technical interpretation of the law. In establishing the importance of wetlands to the public and clearly explaining those values we are able to promote sound coastal development.

³ A complete set of the Coastal Regulations can be obtained by writing: Massachusetts State Bookstore, State House Room 116, Boston, MA 02133

⁴ A more in-depth analysis and description of the development of the Coastal Regulations can be found in the proceedings authored by Geise and Smith, Physical Processes....., and Clayton, Mayo & Mayo, Biological Processes....

Among the survey's areas of inquiry, special attention was paid to open-ended responses which related personal experiences with wetlands regulation, and a series of scaled ratings of the perceived degree of necessity for the regulation of wetlands use, of the value attached to wetlands ownership, and of the effect wetlands regulations have on that value. While this kind of survey primarily measures the perception of regulatory effects, wetlands values, and the effect of regulations on that value, as distinct for the effects and values themselves, we believe the survey has produced interesting insights into how well the total wetlands regulatory system is working in the areas we studied.

Table 1. Survey of wetlands residential property owners: areas of inquiry

- Socio-economic profile
- Past, present, intended future use of wetlands property
- Past, present, intended future modifications of wetlands areas
- Knowledge of, feelings about, wetlands protection measures
- Personal experiences with the wetlands regulatory apparatus
- Concerns related to wetlands property ownership
- Perceptions of wetlands value and the effect of regulations on that value

THE STUDY AREAS

Survey work done during the summer and early fall of 1979 concentrated on the town of Falmouth, on western Cape Cod, and the town of Marshfield, located about 30 miles south of Boston on the Massachusetts South Shore. A related but more limited survey was conducted in Eastham and Orleans on the outer shore of Cape Cod in 1978. This paper focuses on the 1979 work and draws most illustrative material from the Falmouth survey. Results are preliminary at this point.

The developed portions of the shorelines in all these towns are almost entirely devoted to housing. Thus it is the housing industry and present shorefront homeowners who are most likely to make further alterations of the shoreline and wetlands in these areas. Cape Cod towns are all important resort and retirement

communities with strong saltwater recreation orientations. Falmouth alone has 55 miles of tidal shoreline. Estimated peak summer populations in Cape Cod towns are nearly three times their winter populations; as an extreme example, nearly two-thirds of the housing stock in Eastham is unoccupied in the winter (2).

Cape Cod has experienced exceptionally rapid population growth over the past 30 years, with annual growth rates ranging as high as 4%. At the same time, 90% of growth in recent years has been from in-migration, heavily weighted in turn toward the 45 and older age categories (1). The pattern of older, well-educated, higher income people moving to Cape Cod retirement homes, or to second homes destined to become retirement homes, suggested by these data is strongly reflected in the socio-economic characteristics of the Cape Cod property owners we interviewed. Almost half of our Falmouth interviewees were retired or semiretired.

Cape Cod has long been regarded as one of the strongest centers for housing construction activity in New England. The 1972 Cape Cod Economic Base Study (1) revealed that while the resort industry directly accounted for 20% of 1970 payrolls, construction and construction related activities accounted for another 25% of these payrolls. The two industries are strongly linked; Cape Cod construction activity has been dominated by housing construction and the housing market has been largely driven in turn by demand for second and retirement homes. It is not surprising that representatives of the building trades voiced the strongest opposition when the state coastal zone management program was being applied to Cape Cod (6).

Marshfield contrasts the Cape Cod towns in the survey in several respects. Its proximity to Boston made it an attractive commuter suburb during the 1950's and 1960's urban exodus. It experienced explosive growth then that resulted in extensive wetland filling for housing construction, particularly in the town's southern end. Yet Marshfield retains considerable open space and wetlands today; about 2700 of its 18,500 acres were fresh or salt water wetlands in 1972, a number only slightly smaller than the combined total fresh and salt water wetlands in the Cape Cod towns we surveyed (4). The North River, which forms the towns northern and western border, is a wetlands resource of particular significance to Eastern Massachusetts. Development and the attendant filling of wetlands have left the river corridor relatively untouched, partly because thick impervious clay beds in the river's catchment make septic system construction difficult. The outstanding natural qualities of this river made it a prime candidate for designation under the Massachusetts Scenic

Rivers' Program, and early in 1979 it became the first river to be so designated. Property in the river corridor is subject to restrictions as a result of the scenic river designation; and our survey sample in Marshfield included owners of newly restricted property.

Marshfield wetlands property owners interviewed tended to be younger, and less likely to be retired or semiretired than the people we interviewed in Cape Cod towns. While Marshfield people also enjoy their wetlands and waterfront property, they appear less likely than Cape Cod property owners to regard their present wetlands properties as lifelong properties.

SURVEY METHODS

State and local records were surveyed sufficiently to give us a fairly detailed picture of wetlands protection activity at the local level in the towns we studied. Special attention was paid to records of permit applications and reviews under various wetlands programs, building inspector reports, assessor's maps and records, special local zoning determinations, and state determinations of critical wetlands habitats in private hands. State and local personnel connected with all phases of the governmental process which affects private property development near wetlands were interviewed or consulted, and we attended numerous public hearings and meetings related to wetlands protection activities.

This blend of systematic and informal data collection techniques produced the information about how the total system functions at the local level which is sketched below. It also located areas in the towns of interest where the alteration of wetlands by private property owners was a well established activity. Property owners were then selected for in-person interviews in "clusters" from areas in which recent modification activity either had or should have produced encounters with the regulatory system. The selection of interview subjects within clusters was essentially arbitrary, though all individual property owners in the area who had filed for wetlands alteration permits from a local Conservation Commission were included. One hundred Falmouth property owners were interviewed in person, usually in their homes, and 71 Marshfield property owners were interviewed either in person or by telephone. The survey was not limited to those actually known to have encountered the wetlands protection system in some official way.

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II. The Regulatory Climate

While the central piece of legislation regulating the use of wetlands in Massachusetts is the Wetlands Protection Act, a whole suite of regulations, directly and indirectly related to wetlands protection, determines the regulatory climate in which property owners make decisions about how they will use their wetlands.

The Wetlands Protection Act. This act, passed in the 1960's, established local conservation commissions of citizen volunteers to regulate the alteration of wetlands and associated environments such as dunes, beaches and coastal banks. Permits are required from town conservation commissions for all construction activity within 100' of wetlands; permits granted specify performance standards, often in considerable detail. Permission for proposed construction activity can be denied if a commission finds that any of seven specified public benefits of wetlands will be significantly degraded by the activity proposed. Commissions tend to deny permission for projects which involve significant alterations of wetlands *per se*, but to allow development of contiguous uplands, often well within 100' of wetlands. The conditions they impose on single family home construction adjacent to wetlands most often focus on proper placement of septic systems to prevent pollution of wetlands and proper maintenance of the vegetative cover and contour of bordering uplands to prevent erosion.

The Wetlands Restriction Program. Enabling state legislation for this program authorizes the issuance of restrictive orders specifying permitted and prohibited uses of wetlands. Unlike the somewhat diffuse domain regulated by the Wetlands Protection Act, restricted wetlands are mapped from aerial photographs. The restrictive order, along with a copy of the map, is attached to the deed of each property containing a restricted wetland. This program is currently being applied to both inland and coastal wetlands, town-by-town, throughout the coastal zone.

Flood plain zoning bylaws. As towns elect to participate in the National Flood Insurance Program, they pass zoning bylaws which require new construction in flood plains to satisfy the standards authorized by the National Flood Insurance Act and related enactments. With the aid of HUD flood insurance rate maps, building inspectors in participating towns make systematic determinations of whether building permit applications involve construction in the flood plain.

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Other town bylaws. Town zoning and other bylaws can affect development around wetlands in a variety of ways. Subdivision and residential cluster development guidelines often require that 80 to 90 percent of the subdivided area (or of individual lots, in some cases) be upland. Though Title V of the State Environmental Code specifies that residential septic systems are to be located a minimum of 50' from wetlands, zoning bylaws may specify a greater minimum distance. Marshfield, like some other coastal towns, has superimposed wetlands zoning districts in which its special wetlands zoning requirements apply. Other towns define the wetlands to which zoning regulations apply in a variety of ways, not always consistent with definitions given in State legislation. Currently many coastal towns are passing non-zoning special bylaws which reaffirm the purposes of the Wetlands Protection Act, often adding additional public benefits of wetlands, such as recreation and esthetics, to the interests protected by the Act.

III. Results and Discussion

While local conservation commissions are perceived as playing the central role in wetlands regulation at the local level by the public, understanding of the nature of the decisions they are empowered to make and the criteria by which they are supposed to render judgements is quite low. We judged 63% of our Falmouth interview sample to have little or no knowledge of the functions conservation commissions have. At the same time, 38% of the sample had had either direct or indirect encounters with the wetlands regulatory system, either as permit applicants, abutters to applicants, or through other involvement with the cases of friends or neighbors. Many of these people were among those judged to have little or no knowledge of the program, however. While complaints about conservation commission members being biased, inconsistent or inadequately knowledgeable to make proper decisions were fairly frequent, people with complaints often judged the overall system to be fair nonetheless; 63% of those with such experiences judged the system to be a fair one.

The public hearings required for each case which comes before a local conservation commission can become quite charged in controversial cases. It is not uncommon to have lawyers and expert witnesses representing both sides in cases in which there is opposition to proposed development. In such situations conservation commission members do appear to sometimes base their decisions on factors which go beyond their mandate under the Wetlands Protection Act and pertinent local bylaws. On the other hand, the citizen concerns which fuel these debates often

go beyond the purely environmental considerations of the Act as well, and wetlands protection can become an excuse used to legitimize a host of other social and economic concerns.

We similarly discerned in our interviews a pattern of respondents confusing social, political and economic concerns with those which specifically relate to the health of the wetlands environment. This was particularly true in the anecdotal accounts we heard of encounters with wetlands regulations. This same kind of juxtaposition of environmental and non-environmental concerns occurred in response to a question in which property owners were asked to identify their chief concerns related to the ownership of wetlands property from a list we presented; shoreline erosion and invasion of privacy were the choices most often selected.

We discovered in our survey of conservation commission activity in Falmouth and Marshfield that the number of cases actually processed by these commissions is surprisingly small when compared to what we perceived the level of building activity around wetlands to be. The Falmouth Conservation Commission had rendered decisions on only 150 permit requests of all kinds from its formation in 1972 through mid 1979; Marshfield had processed less than half as many. It appears to us that systematic evasion of permit requirements for relatively small-scale activity at least (such as dock and rip-rap installation) is widespread in Falmouth, where structures or shoreline modifications related to recreational boating or erosion control abound along the shoreline. We cannot yet judge this situation in Marshfield.

The Falmouth Conservation Commission had issued permits on only seven single-family home constructions through 1977 (followed by a flurry of 28 decisions in the next year and a half). This occurred during a period in which the town was issuing building permits at a rate of from 300 to 350 per year. There appears to be no convenient way of systematically determining whether new construction impinges on the domain covered by the Wetlands Protection Act, however, since the area is not mapped.

The level of awareness of most other state and local wetlands regulations among those we interviewed was extremely low. Only the National Flood Insurance Program evoked an appreciable level of recognition by the interviewed population at large. A significant minority of respondents who lived in low lying areas and had experienced floods volunteered concern that the program permits development of land lying lower than their own.

On the basis of our preliminary findings we are willing to reject the hypothesis that environmental regulation, and the present administration of the Wetlands Protection and Restriction Acts in particular, is restricting overall growth in the housing industry in the areas we studied. The Cape Cod housing industry especially has shown great strength through most of the 1970's; the trend in housing starts during this period shows fluctuations which seem clearly linked to prevailing market conditions but little else. The only dramatic decline in housing starts during the past decade coincided with the 1974-75 building recession. Growth just prior to the late 1979 round of mortgage interest rate increases was particularly strong (3), and this growth occurred during a period in which the administrative efficiency of wetlands programs was, apparently increasing under impetus from Massachusetts Coastal Zone Management program.

Those controls which most affect the density of new development, and ultimately limit local growth, continue to be the ones which have historically performed that function -- local zoning and other manifestations of home rule. While the state legislation we have described has deflected new development out of wetlands, it does not appear to be appreciably affecting development of immediately adjacent uplands. In areas of Falmouth where subdivision plans were approved locally before most of the town's present wetlands-oriented zoning went into effect, the buffer zone along large areas of salt marsh is now rapidly being enclosed by new housing on half acre lots, with Conservation Commission approval. In other areas, however, where such pre-existing commitments were absent (and where neighborhood attitudes appear less receptive to new development), zoning controls and wetlands regulations seem to be working in concert to preserve open space in the buffer zone as well as in the marshes themselves.

It can be very difficult to predict the effect local enforcement of local bylaws will have on wetlands area development. Often the possible effect and ostensible purpose of local bylaws cannot be understood without first understanding the intent which motivated their passage. An apparent motive for some town non-zoning wetlands bylaws, for example, is to use the authority granted towns under their home rule charters to establish local appeal procedures for wetlands matters as alternatives to the State administrative appeals specified in the Wetlands Protection Act. Towns may be more willing to accept restrictive language in zoning ordinances, from which variances can be granted by local boards of appeals, than they are to see the same language in state legislation which has no built-in procedures for granting variances. The vague wording of many local zoning ordinances creates a

measure of discretionary power often lacking in other kinds of legislation.

Because Marshfield has a superimposed wetlands zoning district, its town conservation officer is empowered to make delineations of privately owned wetlands, upon request, to determine which portions of lots fall within the wetlands zone. We found that he had issued more than 80 such delineations since 1976, mostly on lots where future building near wetlands areas was being considered. Requests were made by potential buyers as well as by land owners contemplating construction or subdivision. We believe that this local system is succeeding in turning many cases away from conservation commission consideration before building plans ever get under way.

Preliminary analysis of our Falmouth interviews shows a strong preference for local control (45%) versus state (22%), federal (10%), or various combinations of control of wetlands regulation. When asked to choose the 'best' hypothetical system of wetlands ownership from a list of options, 37% of our Falmouth sample chose the present system of private ownership. A surprising 30% chose conservation trusts as the best proprietors, however, possibly indicating an underlying general dissatisfaction with the present state of the wetlands environment they knew best.

While we found a high level of commitment to the general principle of environmental protection consistent with the reported findings of other surveys (5), we found limitations to that commitment as well. While 72% of respondents thought wetlands filling should be prohibited, for example, two thirds of that majority thought exceptions should be made if a public benefit were involved. Likewise, substantial majorities thought wetlands use regulations were necessary and that wetlands enhanced the value of their property. A minority, however, gave answers to questions on wetlands value suggesting they believed their neighbors' wetlands, which contributed to their privacy, sense of open space, and esthetics, were more valuable to them than their own wetlands, which they viewed as inhibiting their access to the water or as presenting the kind of property maintenance problems one usually associates with crabgrass. This statement may in its own way summarize the basic dilemma facing the wetlands program manager who must balance his environmental mandate against the legitimate, but sometimes contradictory and inexplicable perceptions and expectations of the affected public.

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CHARACTERIZATION OF BEACH AND DUNE RESOURCES USED IN THE IMPLEMENTATION OF THE MASSACHUSETTS COASTAL WETLANDS RESTRICTION ACT

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ABSTRACT

Under the Massachusetts Coastal Wetlands Restriction Act (G.L.C. 130, S. 105), the Department of Environmental Management is currently mandated to prohibit certain land uses in specific wetland areas by means of a deed restriction process. With the creation of policy guidelines by the Massachusetts Coastal Zone Management Program, addition of technical and scientific staff, use of orthophoto basemaps, and administrative procedures which include scientific research, implementation of the Act has become more substantial.

Recognition of the legal ramifications centered upon the taking issue has emphasized the need for considering evaluation of wetlands. In general all restricted wetlands are characterized physically and biologically and their functional value must be determined in relation to one or more of their statutory interests. Depending on the type and amount of existing information and data, field research may be necessary to complete the resource characterization.

INTRODUCTION

Largely due to the fact that wetland protection legislation existed, Massachusetts had a Coastal Zone Management Program approved in April, 1978. Unlike most other states which had to formulate and adopt legislation before a program could be implemented with federal funds, Massachusetts was ready to proceed with a more substantive approach. Utilization of scientific methods and a technical understanding of wetland values is fundamental in this approach.

The purpose of this paper is to emphasize 1) the substantive and procedural changes which have occurred in the Massachusetts Coastal Wetlands Restriction Program, 2) the legal influence on the type of criteria used for restricting wetlands, and 3) the implementation of a scientifically sound method in evaluating beaches and dunes. Elements such as public relations, political awareness, and coordination of public meetings are not discussed. In order to gain a better understanding of the Coastal Wetlands Restriction Act and the manner in which the program has changed, background information is presented regarding legislative

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