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Julie G. Bradshaw
Virginia Institute of Marine Science

Virginia Institute of Marine Science, Wetlands Program

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Technical Report

Special Edition

College of William and Mary
Virginia Institute of Marine Science
School of Marine Science
Wetlands Program
Gloucester Point, Virginia 23062

Dr. Carl Herthner, Program Director

Commonwealth's Declared Policy:

**"to preserve the
wetlands and to
prevent their
despoliation and
destruction. . ."**

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Monitoring of Compliance With Permits Granted By Local Wetlands Boards

Julie G. Bradshaw

Introduction

Activities in Virginia's tidal wetlands are regulated at the State and local level by the Virginia Wetlands Protection Act of 1972. For localities (i.e., counties, towns and cities) which elect to regulate their own wetlands, the Act requires adoption of a prescribed ordinance and formation of a volunteer citizen board of 5 or 7 members. The Virginia Marine Resources Commission (VMRC), the Commonwealth's marine resource management agency, retains an oversight and appellate role over these wetlands boards. For localities which choose not to adopt the wetlands ordinance, VMRC assumes primary regulatory authority over tidal wetlands within that locality. Of 48 localities eligible to regulate tidal wetlands within their borders, 33 have adopted local wetlands ordinances and formed wetlands boards.

The wetlands boards and/or VMRC have the ability to grant or deny permits for the use or development of wetlands within their jurisdictions. Parties wishing to use or develop wetlands must first submit a permit application which includes a statement of purpose and detailed drawings and descriptions of the proposed activity. The types of activities for which parties request permits include shoreline stabilization structures such as bulkheads and riprap revetments, and water access structures and activities such as boat ramps, community or commercial piers, and dredging. The role of the Virginia Institute of Marine Science (VIMS) in the permitting process has been to estimate the impacts of projects on the marine environment and to recommend alternatives to minimize those impacts where possible. Quite often these recommendations involve realignment of shoreline structures to lessen the areal extent of wetlands impacted.

The wetlands boards (or VMRC for those localities without wetlands boards) hold a public hearing for each permit application. All interested citizens, regulatory and advisory agencies are given the opportunity to comment on proposed activities in writing and at the public hearing. Based on a consideration of public and private benefits and detriments expected from the proposed activities, the wetlands boards decide whether to deny permits or to grant them as proposed or with conditions.

(continued)

Once permits are granted, there is no requirement or suggestion in the Wetlands Act or in guidelines promulgated by VMRC that the permits be monitored for compliance. VIMS has not undertaken a formal study of individual projects to determine the extent of noncompliance with permits. However, we are aware of many projects which were not constructed as permitted. The noncompliance in many of these cases involved construction of bulkheads or riprap revetments at alignments up to several feet channelward of the permitted alignments. In other cases, permittees did not dispose of dredged material in the permitted location or manner, or constructed boat ramps in locations other than those permitted.

The potential significance of noncompliance is evident when the magnitudes of permitted projects and impacts are examined. For example, in 1988, approximately 44,000 linear feet of shoreline were permitted to be bulkheaded in tidewater Virginia. Preliminary analysis indicates that the average permitted bulkhead encroachment on wetlands was approximately 2.3 feet per linear foot of bulkhead, resulting in a projected total loss of approximately 100,000 square feet of wetlands due to bulkhead construction and backfilling. If each of those bulkheads was constructed only one foot channelward of its permitted alignment, the additional wetland loss would be approximately 44 percent greater. While encroachment into wetlands of several feet more than permitted may be relatively easy to detect by watchful neighbors or during a casual follow-up inspection, a one foot difference in permitted versus actual alignment would be more difficult to detect without a structured monitoring program, and may seem punitive to correct once a project is completed. Both individually and cumulatively, wetland losses due to permit noncompliance are potentially significant. Because of their great and unique values as an ecological component of the marine environment and as a physical buffer for erosion, flooding and water quality control, continuing unnecessary losses of wetland resources should be avoided.

A prudent wetland management program should therefore include some method of determining compliance with permits granted. A survey was conducted in order to determine how, and to what extent, the wetlands boards monitor for permit compliance.

Methods

Most localities provide the wetlands boards with some degree of staffing which ranges from strictly administrative or clerical assistance to varying levels of professional technical assistance. Telephone and personal interviews with wetlands board staff were conducted during November 1989. Interviewees were questioned about five aspects of their compliance monitoring programs:

- a.) whether shoreline structures required building permits in addition to the wetlands permits required by the Wetlands Act,
- b.) whether the applicant is required to provide *benchmarks* in the application (i.e., distances of proposed structures from more than one fixed reference point)
- c.) whether the alignment permitted by the wetlands board is staked by the staff or wetlands board prior to construction,
- d.) whether the permittee is required to notify staff prior to beginning or after completing the permitted activity,
- e.) whether staff or wetlands board members undertake site inspections after the permit is granted.

Of the 33 existing wetlands boards, staff from 24 wetlands boards were interviewed. Wetlands boards which heard fewer than four permit applications in 1988 were excluded from this survey. The results reported are based on responses to the November 1989 survey and do not reflect program changes which may have occurred since that time.

Survey responses were weighted by the number of permits granted in 1988 by each wetlands board as reported by the wetlands boards in their annual reports to VMRC, and collated by R.C. Neikirk of VMRC.

Responses by rural and urban boards were compared. For the purpose of this survey, rural localities were defined as those with a population density less than 140 per square mile; urban localities were defined as those with a population density greater than 140 per square mile, using population data from the 1980 census by the U.S. Department of Commerce (Univ.

of Virginia, 1987). By this definition, the least populous urban counties were James City and Stafford; the most populous rural locality was Suffolk.

Results and Discussion

Wetlands board staff responses to questions about aspects of their permit compliance monitoring programs are summarized in Table 1.

Table 1. Responses of wetlands board staff to questions about aspects of their permit compliance monitoring programs (from 24 wetlands boards except where indicated).

	Number of wetlands boards	
Permit Compliance Program Components:		

Building permits (of 22 Boards)		
—required for all structures	7	(32%)
—required for wooden structures only	12	(54%)
—not required	3	(14%)

Benchmarks required	4	(17%)

Staking of permitted alignments		
—all projects staked	4	(17%)
—5 to 40% of projects staked	7	(29%)
—no projects staked	13	(54%)

Notification required	12	(50%)

Inspections		
—all projects inspected	6	(25%)
—60-95% of projects inspected	4	(17%)
—20-40% of projects inspected	6	(25%)
—no projects inspected	8	(33%)

Building permits

Of 22 localities which responded to this question, 7 (32%) require building permits for all structures (including riprap revetments), 12 (54%) require building permits only for wooden

structures, and 3 (14%) do not require building permits.

Benchmarks

Four of 24 (17%) wetlands boards require the use of benchmarks in the project drawings. Three of these wetlands boards require the applicant to provide this information; one locality's staff generates these benchmarks themselves for inclusion in the permits. Benchmarks are not required by 20 of 24 (83%) wetlands boards.

Staking

Eleven of 24 (46%) localities stake the permitted alignments for bulkheads and riprap revetments. Of these eleven, four localities stake all alignments, and the other seven stake 5 to 40 percent of the alignments. Those which stake only some of the alignments stated that they stake only projects with complex alignments, those with the potential to impact significant wetland resources, or those involving contractors with whom they had previously had trouble.

Notification

Twelve of 24 (50%) localities require the permittee to notify staff prior to beginning work on a permitted activity, usually at least 24 hours before beginning work. One of these 12 has required such notification of only 15% of permittees, generally if the application was complex, controversial, or had the potential to impact significant wetlands resources. Of those localities which do not require prior notification, one has required permittees to notify staff after completion of the permitted activity for 25% of permits, usually when the project involved restoration of wetlands or stabilization of a steep slope.

Inspections

Sixteen of 24 (67%) localities conduct inspections of permitted activities. Six of 24 (25%) inspect all projects; 10 of 24 (42%) inspect at least half of the projects. Inspection programs are of four general types:

- a.) designated inspections based on the progress of the project; requires notification of staff by permittee (e.g., prior to backfilling a bulkhead, after completion of the project) (5 of 16

localities which conduct inspections utilize this method)

- b.) periodic (e.g., monthly) inspections of all pending projects (2 of 16 utilize this method)
- c.) unstructured inspections (i.e., made "whenever they get around to it") (6 of 16). Also in this category were inspections prompted by complaint calls from neighbors of permittees or other members of the general public. In fact, many localities stated that surveillance by neighbors was their primary form of permit compliance monitoring.
- d.) chance inspections; unplanned; projects seen only if staff happens to be in the vicinity (3 of 16).

Determination of compliance

Staff members described a variety of methods which they used for determining permit compliance during inspections. Some determinations of compliance were based on staff recollection of the permit requirements and how the shoreline looked prior to the permitted activity. Others involved comparison of completed activities with photographs taken at prior site visits. Often these photographs depicted stakes or flagging which indicated the proposed or permitted alignment. Other localities evaluated the completed activity by comparing it with the drawings submitted in the application.

There are problems inherent in all of these approaches. Shorelines are often drastically altered by permitted activities such as construction of bulkheading and riprap. In many cases, the adjacent upland may also be altered significantly during the time which elapses between permit issuance and the accomplishment of the permitted activities. The new landscape may not be easily recognizable and comparison of the site with recollections or with photographs, subjective approaches at best, may not yield the desired results. Drawings included with the permit application are often inadequate to determine the exact positioning or alignment of a proposed structure or activity because they are not drawn to scale or fail to include reference points such as existing structures and tidal references (i.e., mean low water and mean high water). Inspections for some of the localities which also require building permits for shoreline structures are conducted by building inspectors

who may not be familiar with wetlands, the wetland permit application, the wetland permitting process, or permit conditions.

Localities which require scale drawings or reference points to be included in the application have an objective standard by which compliance may be determined by anyone with a tape measure and drawings of the permitted activity. The use of benchmarks (i.e., distances of proposed structures from more than one fixed reference point) is a simple method by which inspectors (even those unfamiliar with particular sites, wetlands identification, or the wetland permitting process) may evaluate permit compliance.

Program structure

The localities' responses to questions about the five aspects of permit compliance monitoring programs investigated ranged from all negative responses (i.e., none of the five activities was required or accomplished) to all affirmative responses (i.e., the localities used all five components in their compliance monitoring programs).

At a minimum, a program to monitor for compliance with wetlands permits should include:

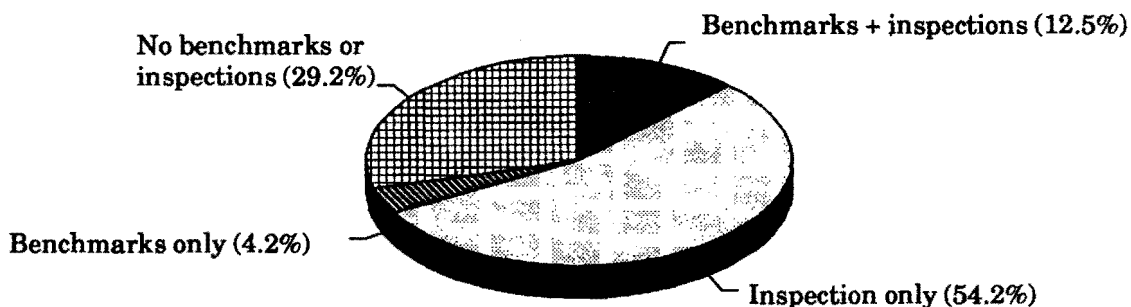
- a.) a follow-up inspection of the permitted project, and
- b.) standards (e.g., benchmarks) by which the inspector may judge whether the permit conditions have been satisfied.

The other aspects of permit compliance monitoring programs which were investigated (i.e., requirement for building permits, notification requirement, and staking of permitted alignments) are strategies which could make such a program easier to accomplish, although they are not absolutely essential for successful monitoring of permit compliance.

Based on the criteria of inspections and benchmarks, the wetlands boards' programs for monitoring permit compliance were categorized by structure. Results are summarized in Figure 1.

Of the 24 wetland boards interviewed, the majority (13, or 54%) inspected at least some of the permitted projects but did not use benchmarks as a standard by which to determine compliance. Three of the 24 localities required benchmarks in the applications and conducted inspections of at least some permitted projects. One locality required benchmarks in

Figure 1. Permit compliance monitoring program structure (% of boards).



permit applications but did not conduct inspections of permitted projects. The remaining seven wetland boards (29%) neither required benchmarks nor inspected permitted projects for compliance.

Permits granted in 1988

The wetlands boards surveyed granted 835 permits in 1988. Although 67 percent of the wetlands boards inspect at least some projects after they are permitted, when applied to the number of permits granted by those localities in 1988, only 47 percent of these projects would have been inspected.

Comparisons of other monitoring components are shown in Figure 2. Although 46 percent of the boards required staking of permitted alignments, those boards only granted 38 percent of the 1988 permits. Conversely, although only 17 percent of the wetlands boards require benchmarks in permit applications, those boards granted 34 percent of the 1988 permits. For the other aspects of monitoring programs (i.e., the notification and building permit requirements) the proportion of boards using these components was similar to the proportion of permits granted by those boards in 1988.

Comparison of rural and urban boards

Of the 24 wetlands boards surveyed, 13 were classified as rural and 11 as urban. Boards from urban localities granted 48 percent of the 1988 permits. The structures of permit compliance monitoring programs of rural and urban localities are compared in Table 2. The propor-

tion of rural and urban wetlands boards within each of the four program structures was similar. However, when the responses were weighted by the number of permits granted by each board in 1988, the proportion of permits granted by rural and urban boards within each of the four program structures was significantly different. Examination of Table 2 reveals where these differences occur. The majority (59%) of permits granted by urban boards in 1988 were granted by boards which require both inspections and benchmarks. Only 6 percent of permits granted by rural boards fall into this category. The majority of permits granted by rural boards were split between boards which have some type of inspection program but do not require benchmarks (44%) and boards which neither inspect projects nor have a benchmark requirement (49%). When staff responses about the proportion of projects inspected for compliance are applied to the numbers of permits granted in 1988 by each locality, it is revealed that 70% of activities permitted in urban localities are inspected for compliance, while only 27% of those in rural areas are inspected.

Some of the differences between the permit compliance monitoring programs of rural and urban localities may be attributable to differences in the amount of staff support available to the boards. In general, urban wetlands boards have a greater level of staff support than do rural boards (Hershner et al., 1985). Many of the rural staff members interviewed stated that monitoring of permit compliance could not be accomplished at current staffing levels.

Figure 2. Percent of localities requiring permit compliance monitoring program components.

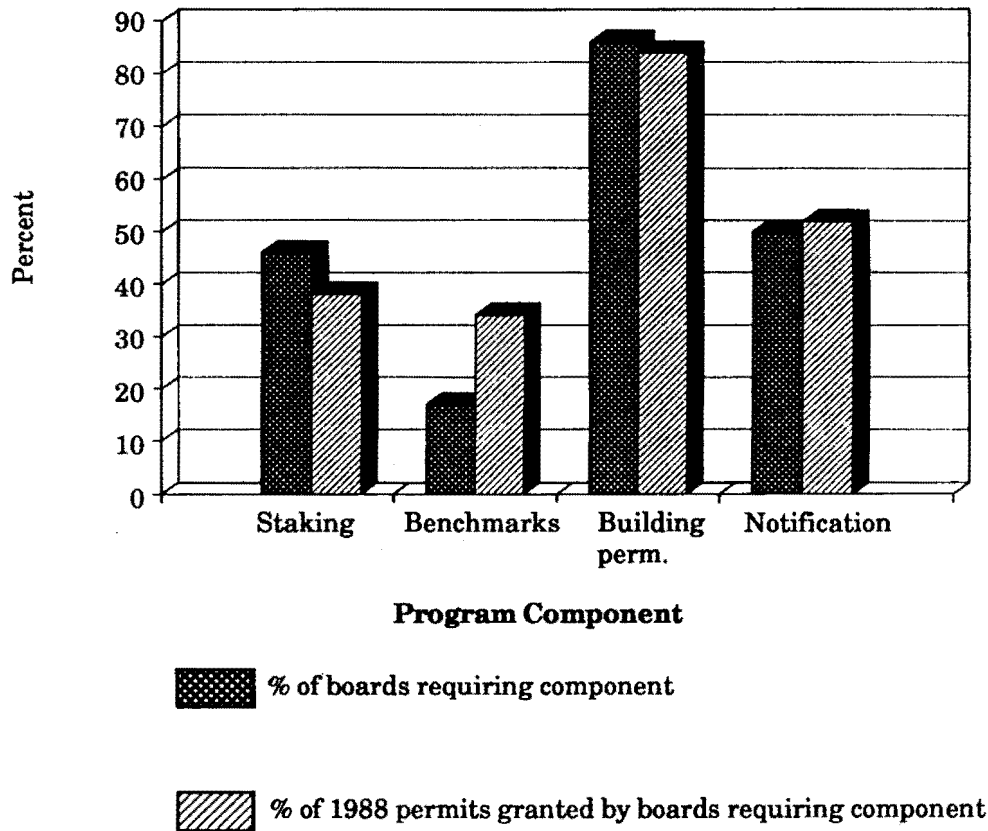


Table 2. Comparison of urban and rural wetlands board programs to monitor for permit compliance.

			Some or all projects inspected		No projects inspected	
			Benchmarks		Benchmarks	
			Required	Not required	Required	Not required
Number of wetlands boards	rural	13	1 (8%)	7 (54%)	0 (0%)	5 (38%)
	urban	11	2 (18%)	6 (54%)	1 (9%)	2 (18%)
Number of permits granted in 1988	rural	433	28 (6%)	193 (44%)	0 (0%)	212 (49%)
	urban	402	239 (59%)	101 (25%)	13 (3%)	49 (12%)

A model permit compliance monitoring program

A model program for permit compliance monitoring could include:

1. **Benchmarks.** Benchmarks or tie-downs are distances from the most channelward extent and all corners or turns of the proposed structure or activity to more than one permanent fixed reference point (e.g., the corners of an existing house). If permanent fixed reference points do not exist in the vicinity of the project, they should be established (e.g., using steel rods) and maintained until the project is complete and has been inspected by all regulatory agencies involved. Benchmarks should be included in the permit application drawings and can be used by regulatory personnel prior to permit approval to determine proposed project locations, and after permit approval to determine compliance. Some magnitude of allowable deviation from the permitted benchmark distances should be established by the locality.
2. **Alignment staking.** Ideally, the applicant would stake a proposed project upon submitting the application and using the benchmarks in the application. If permitted alignment was different from that proposed, the permitted alignment would be staked by the locality, or staked by the applicant and confirmed by the locality.
3. **Notification.** Ideally, permittees should notify localities one or two days prior to beginning a permitted activity. Notification would allow scheduling of inspections by the locality.
4. **Inspection.** Inspection could be based on the progress of the project; for example, a locality could require inspection of a bulkhead prior to installation of sheeting or prior to backfilling. Noncompliance could be easier to correct at this point than after backfilling. If the locality requires the applicant to stake the permitted alignment, the notification and inspection procedure could be used to confirm that the applicant's stakes are at the permitted alignment. Inspections could also be independent of the progress of individual projects; for example, a locality could visit a particular creek system periodically and inspect any projects underway. Most localities which currently use this approach also survey for unpermitted activities concurrently with inspection of permitted projects. Using this method of inspection, however, non-compliance may not be discovered until after

project completion, when it may be more difficult to correct.

5. **Building permits.** Most localities currently require that building permits be obtained for shoreline construction projects in addition to permits granted by the wetlands boards. If an established building permit inspection program exists, it could be used in conjunction with a wetlands permit compliance monitoring program, particularly if the monitoring program includes other suggested components (i.e., benchmarks, staking, and notification).

Conclusion

Virginia's Tidal Wetlands Protection Act and its guidelines allow the use or development of wetlands where justified and unavoidable. Unnecessary loss of Virginia's tidal wetlands is a course which the Commonwealth must avoid if it is to retain the essential ecological and physical services of these unique resources. Potential increased "natural" loss of wetlands due to rising sea level will make preservation of existing wetlands even more critical in the years to come. Until public pressure on coastal resources is alleviated, the burden is on regulatory agencies, such as the wetlands boards, to prevent wetland despoliation. An essential aspect of this wetland stewardship role is the monitoring of permit compliance. A program which grants permits without monitoring them for compliance has the potential to undermine the regulatory process by allowing unnecessary wetland losses. Such a program may give citizens a false impression of the degree to which its wetland resources are being protected. If Virginia is to be a leader in the preservation and restoration of the Chesapeake Bay, it must continue to focus attention on tidal wetlands, the critical interface between the land and the Bay.

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