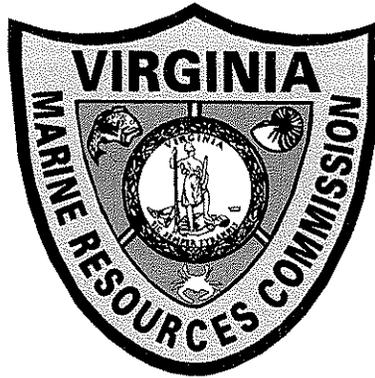


VIRGINIA MARINE RESOURCES COMMISSION

Permit Compliance And Inspection Program



Final Report CZM Grant # NA15NOS4190164 Task #6 November 2016

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The views expressed herein are those of the author and do not reflect the views of NOAA or any of its subagencies.



Virginia Coastal Zone
MANAGEMENT PROGRAM



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| Attachment B | Federal, State, and Local Joint Permit Application, including Tidewater form. |
| Attachment C | Permit Placard. |
| Attachment D | Notice of intent to commence work post card. |
| Attachment E | Sample Permit. |
| Attachment F | Sample Project Compliance Assessment Worksheet. |
| Attachment G | Compliance Inspection Report. |

Introduction

The Virginia Marine Resources Commission (“Commission” or “VMRC”), as provided in Chapter 12 of Title 28.2 of the Code of Virginia, is the State agency responsible for issuing permits for encroachments in, on, or over State-owned submerged lands throughout the Commonwealth. Virginia is one of six “low water states” and, as such, maintains ownership of all submerged lands channelward of the mean low water mark in tidal waters and regulatory authority channelward of the ordinary high water mark on most naturally occurring nontidal perennial streams, creeks and rivers.

In addition to managing the Commonwealth’s 1,472,000 acres of submerged lands, the Commission also regulates the use or development of tidal wetlands and coastal primary sand dunes / beaches pursuant to the provisions of Chapters 13 and 14 of Title 28.2 of the Code of Virginia. Local governments in Tidewater Virginia are provided the option of adopting and locally administering the wetlands and dune / beaches zoning ordinances. VMRC, however, maintains original jurisdiction in localities that have not adopted the ordinances. Even if locally adopted and implemented, the Commission retains certain oversight responsibilities and reviews all decisions made by those local boards. Figure 1. shows the localities within Tidewater Virginia that have adopted the wetlands ordinance and the dune / beach ordinance that can now be adopted by local governments throughout tidewater Virginia.

The regulatory activities conducted by the Commission and the 34 local wetlands boards are integral components of Virginia’s approved Coastal Zone Management Program. The permit review processes used by the Commission and these local wetlands boards ensures that necessary economic development is permitted in a manner which minimizes adverse impacts to the valuable natural resources within our coastal zone.

Permit compliance is a mandatory component of any effective regulatory program. As such, it is essential that the terms and conditions contained in the permit documents are followed if the full benefits of the regulatory program are to be realized. Without such permit compliance, the regulatory process breaks down and serves only as an increased bureaucracy.

In order to evaluate compliance with permits issued by VMRC and local wetlands boards, a survey, funded in part by CRMP grant #NA90AA-H-CZ96, was originally conducted in 1991. The compliance survey was designed to investigate and gauge the effectiveness of the various compliance monitoring programs utilized by VMRC and the local wetlands boards. The survey was intended to both identify existing compliance shortcomings and to ascertain effective compliance monitoring techniques in order to enable VMRC to develop concise recommendations to enhance compliance monitoring programs.

The purpose of this grant project was to continue the implementation of recommendations of the original Permit Compliance and Inspection Program report and continue a standardized permit compliance program for those permits issued by the Commission within the Coastal Zone. Additionally, Commission staff assessed permit compliance for wetland projects authorized in 2014. The latter was designed as a follow up to the previous compliance inspections conducted for projects permitted from 1989 through 2013.

This document is intended to serve as the final report for Task 6 of Grant No. NA15NOS4190164 and provides an overview of the steps taken to continue the compliance monitoring program and a review of the compliance data gathered during the grant year. Compliance data gathered during the previous years is also included.

Permit Compliance Program Overview

In the December 1991 Habitat Management Division – Special Report (Attachment A), five recommendations were made for VMRC to enhance permit compliance efforts.

1. Require detailed drawings for all projects requiring a VMRC permit.
2. Require accurate benchmarks or reference points on the plan view drawing(s).
3. Require Engineers to take an adequate number of slides during the initial site visit to illustrate pre-construction conditions.
4. Require Engineers to conduct post-construction inspections at all sites permitted by VMRC.
5. Incorporate the data collected from the post-construction inspections into the Habitat Management Division's computer database.

In 1993, with funding provided by CZM Grant No. NA27020312-1, these recommendations were incorporated into the Commission compliance monitoring program through several mechanisms. The Joint Permit Application (Attachment B) was amended to reflect the need for more detailed drawings with accurate benchmarks. The Joint Permit Application was last revised in 2012, as was the Tidewater form. New conditions were incorporated into Commission permits requiring that a permit placard (Attachment C) be posted at the project site, and procedures were established for the Commission to receive notice when project construction is started. The latter was accomplished through the use of a self-addressed stamped card (Attachment D) that is returned to the Commission by the permittee. Special conditions related to permit compliance have been added to all permits issued by VMRC. In addition, a statement has been added to the permit cover letter that warns permittees that deviation from the permit specifications could result in a civil charge of up to \$10,000 per violation. Examples of these can be found in the attached sample permit (Attachment E).

Procedures have been established within the Habitat Management Division to require that the Division's Environmental Engineers inspect all permitted projects. These procedures require that photos are taken of the site before and after construction, and that the final inspections are documented through the use of a Project Compliance Assessment Report (Attachment F).

In addition, a compliance database has been established to track compliance monitoring efforts and results. Data for projects inspected during the grant year can be found in Attachment G. Prior to the 1994 grant year the compliance database had been separate from the Habitat Management Division's permit tracking data. The compliance data for projects permitted by VMRC is now incorporated into the Habitat Management Division permit tracking system. The compliance data is entered and maintained by the Division's Compliance Program Support Technician supported by the grant, and the system is accessible by all Division Staff.

Permit Compliance Survey Results

During the grant year a total of 359 compliance inspections were conducted by VMRC Habitat Management Division Staff. This involved inspections of projects permitted by VMRC and 130 inspections of projects permitted by local wetlands boards. The inspections for projects permitted by VMRC followed receipt of the self-addressed stamped card indicating the project commencement or in response to the follow-up letter sent by VMRC to the permittee prior to permit expiration that requests they notify the Commission of the project status. If no response is received, the site is scheduled for inspection upon permit expiration. The inspected wetland projects were randomly selected from projects permitted in 2014 in order to gauge compliance with wetland board permits and to add the data to that collected for projects permitted from 1989 through 2013.

Prior to 1993, wetland projects and VMRC permits were randomly selected for compliance inspections and both permit types were reported together in the previous data. However, since initiation of the Habitat Management Division program to inspect all VMRC permits, the random selection process is used only for wetland permit projects.

Compliance results for all inspections are grouped into the following five categories:

1. In compliance.
2. Moderate compliance (the average allowable encroachment does not exceed 6 inches greater than the permitted alignment and the length and square footage measurements are no more than 10% greater than authorized.
3. Out of compliance (the average additional encroachment exceeded 6 inches and the length or square footage measurements were more than 10% greater than authorized.
4. Unable to determine compliance.
5. Project not constructed.

Compliance rates for the projects permitted by VMRC and inspected during the grant year are shown in Figure 2. Cumulative totals for all VMRC permits inspected since initiation of the Habitat Management Division compliance program are shown in Figure 3. While the overall data for the grant year shows that 93% of the projects were found to be in compliance, only 2 of the projects were found to be out of compliance. The remainder were either in moderate compliance (1%), or were not constructed. Although compliance could not be determined for 5% of the projects, inspections in these cases did not indicate there were any permit violations.

Table 1 reflects the number of randomly selected projects reviewed in each locality for permits issued since 1989. Thirty-three localities were represented over the seventeen-year period. Results reported through 1992 include projects involving both wetlands and State-owned subaqueous lands. The yearly results for 1989 through 2014 are shown in Table 2 and in Figures 4 through 29 respectively.

Conclusion

Based on our review of the data collected and considering the improvements in observed compliance rates since the beginning of this initiative, the program appears to be working. However, compliance rates do seem to have stabilized. As such, our efforts must continue, however, if we are to ever approach the ultimate goal of 100% compliance on all permitted projects. In order to achieve this goal we must continue our current monitoring program. Furthermore, we believe there are areas where we must continue to focus our attention.

At the local level, staffing and financial constraints continue to deter many wetland boards from implementing a formal wetlands compliance program. Table 3 provides an overview of compliance monitoring programs by locality. This table is based on a VMRC staff evaluation of local programs rather than any comprehensive survey. Therefore, some local programs could characterize their compliance efforts differently. The table does, however, provide an indication of the range of effort at the local level and provides, in conjunction with our compliance surveys, information necessary to focus attention in areas where assistance may be needed the most. Although we plan to continue inspections in all localities, we will attempt to provide additional assistance in those areas that only have informal procedures for compliance monitoring and which conduct very few compliance checks.

For projects requiring permits from the Commission, the compliance program has led to better project drawings and the use of accurate benchmarks for improved project monitoring. On the other hand, it has allowed us to identify those projects that present a monitoring challenge. For example, as previously noted, dredging projects have proven difficult to monitor. It is not always appropriate to require the average homeowner to incur the expense of a post dredge survey for a small dredging project under his pier slip. As a result, special permit conditions have been developed that require pre-dredging conferences and encourage post dredging surveys on large dredging projects. Even with the special conditions, however, this continues to be an area where we must continue to focus our attention.

To date, the compliance monitoring program has allowed evaluations of the effectiveness of our permit and monitoring procedures. As such, the monitoring program can only improve our resource management responsibilities. Therefore, permit compliance initiatives must continue to be a long-term effort if we are to ensure proper construction compliance and the protection of our valuable natural resources. This effort, combined with the improvement of our permit tracking database and the development of GIS capabilities, is necessary if we are to realize the goal of making cumulative impact assessments a part of our wetlands and submerged lands permitting program.

VMRC Permits

October 1, 2015 through September 30, 2016

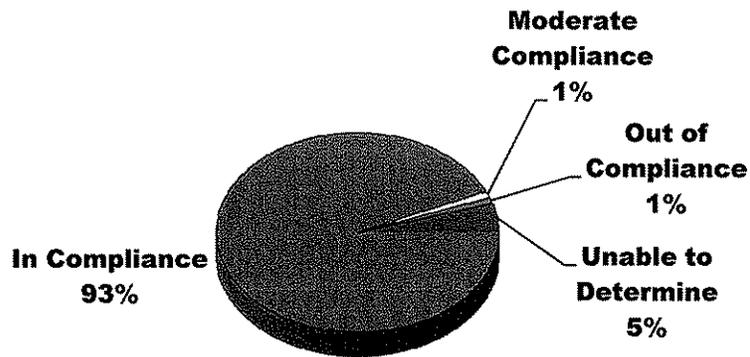
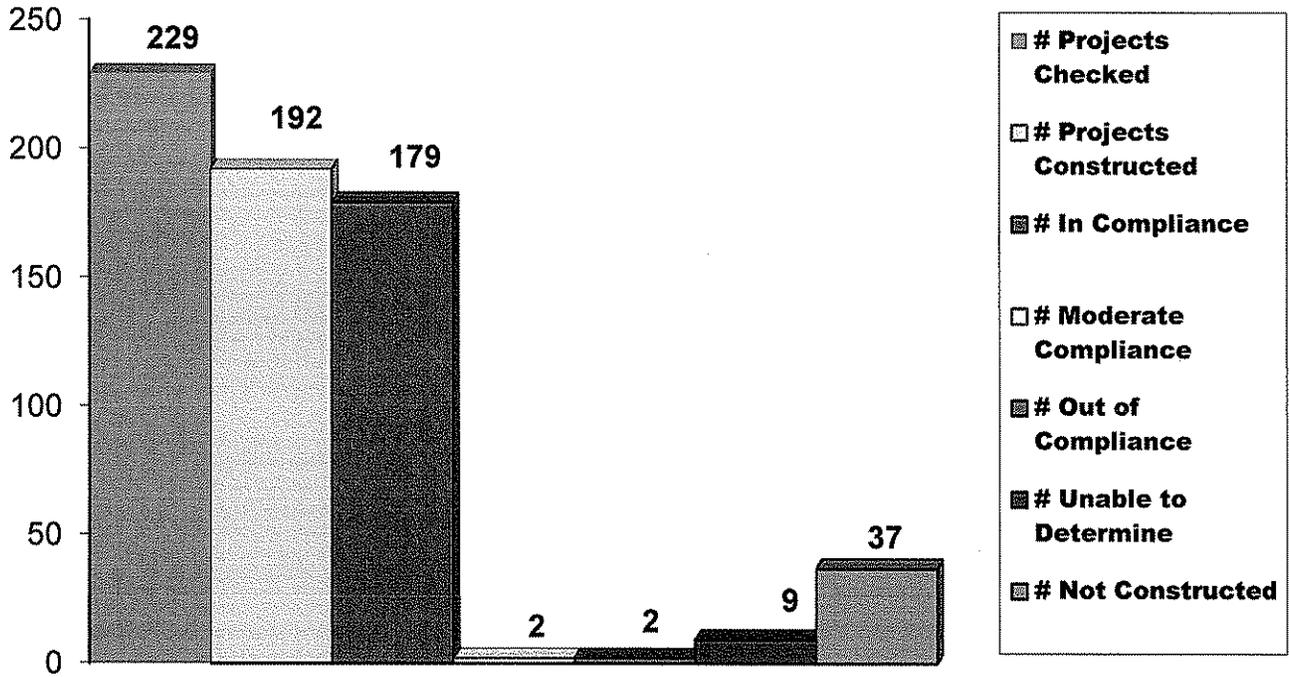


Figure 2 – Inspections of VMRC permits for the Grant year following notification of project commencement or permit expiration

All VMRC Permits

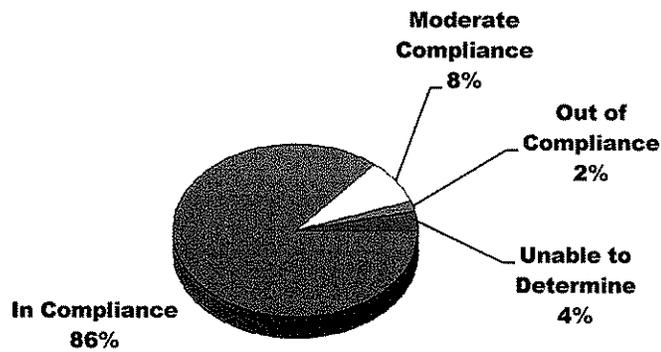
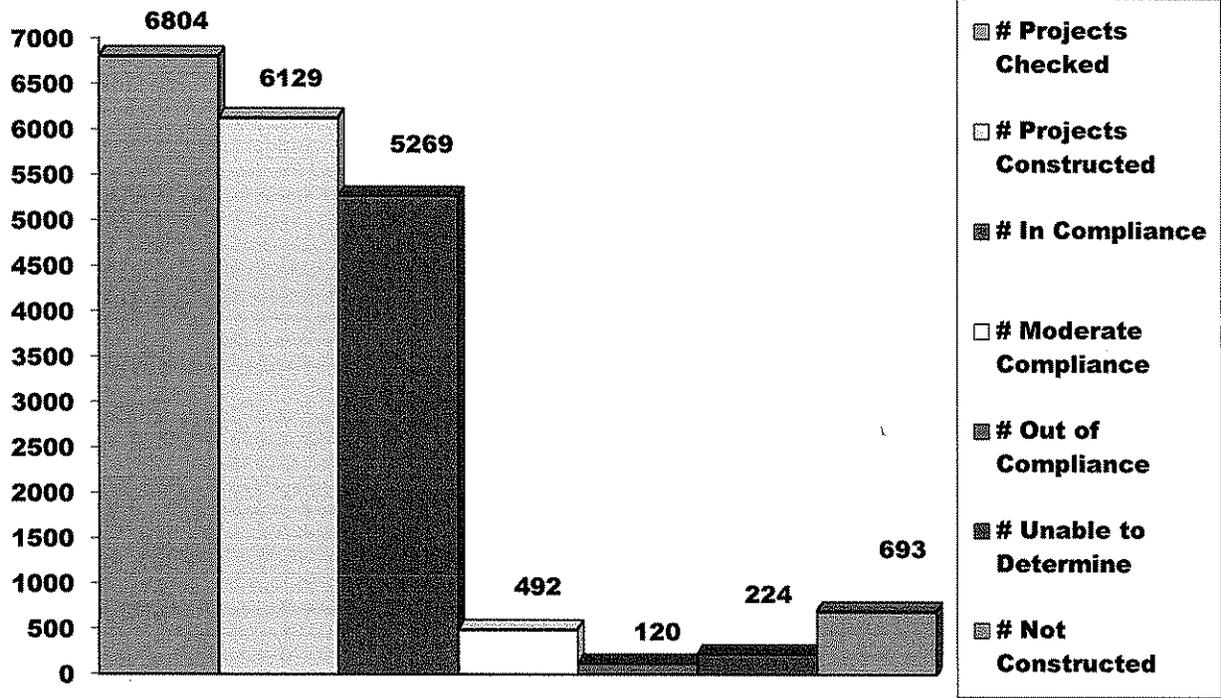


Figure 3 – Inspections since 1993 of all VMRC permits following notification that projects have commenced, or have reached permit expiration.

2014 Inspections

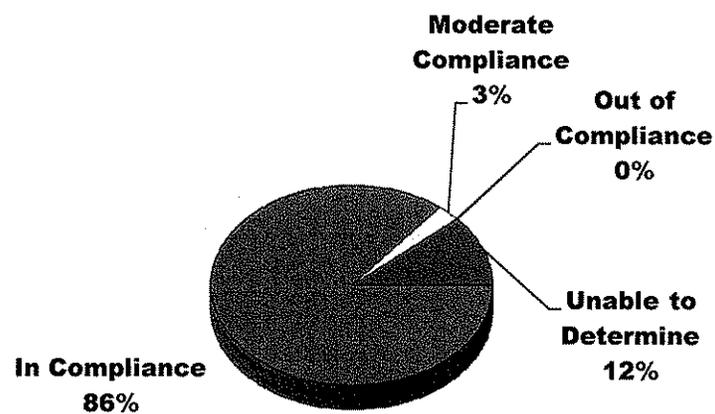
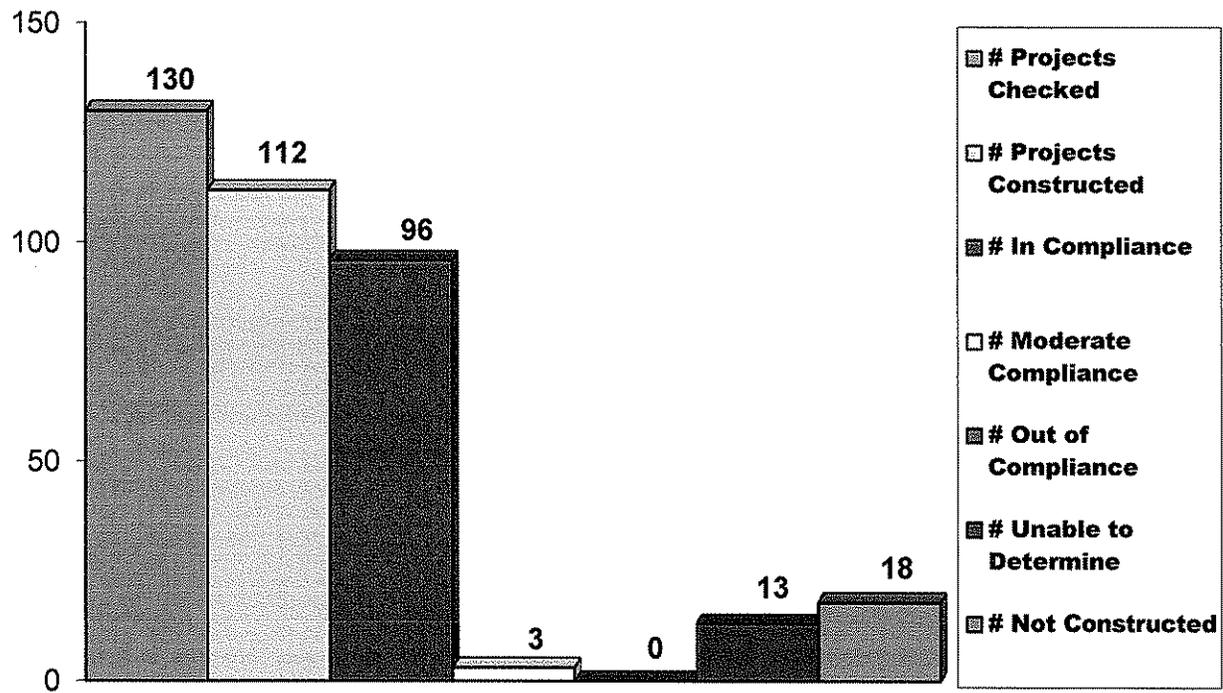


Figure 4 – Inspections for randomly selected wetland permits issued in 2014.

2013 Inspections

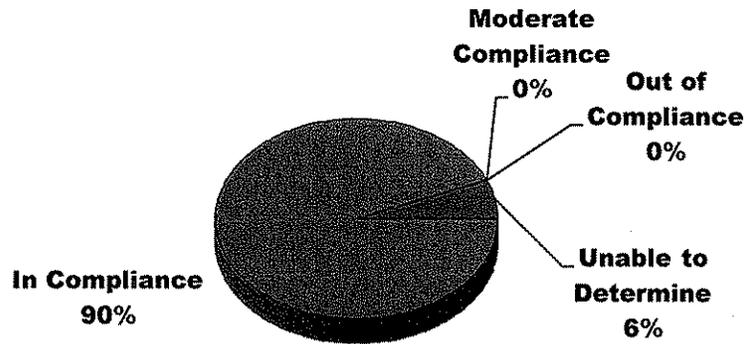
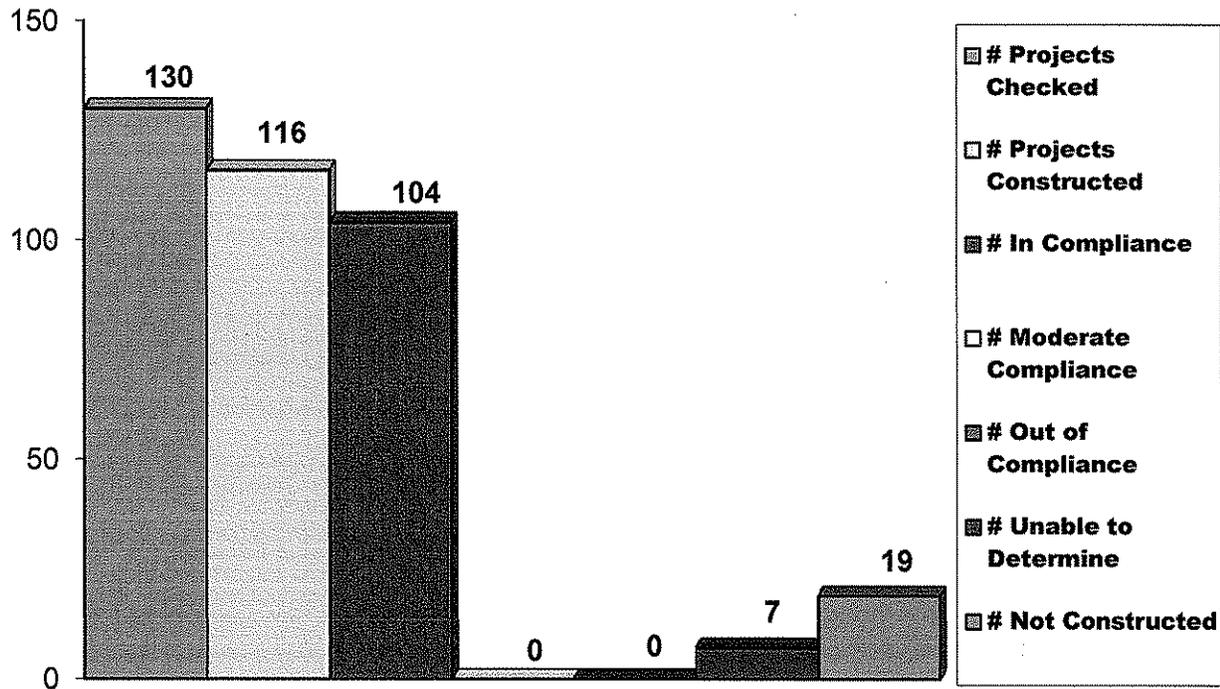


Figure 5 – Inspections for randomly selected wetland permits issued in 2013.

2012 Inspections

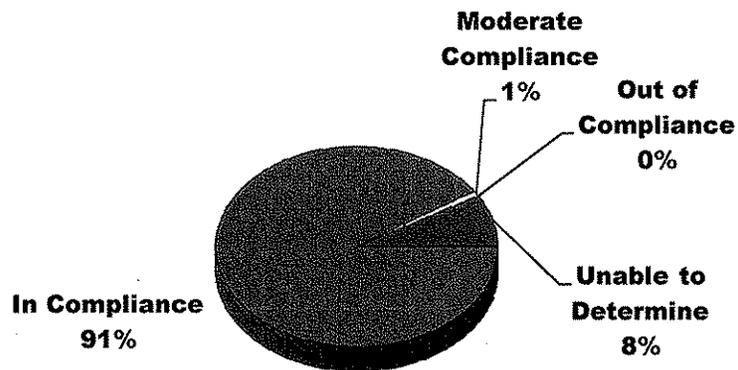
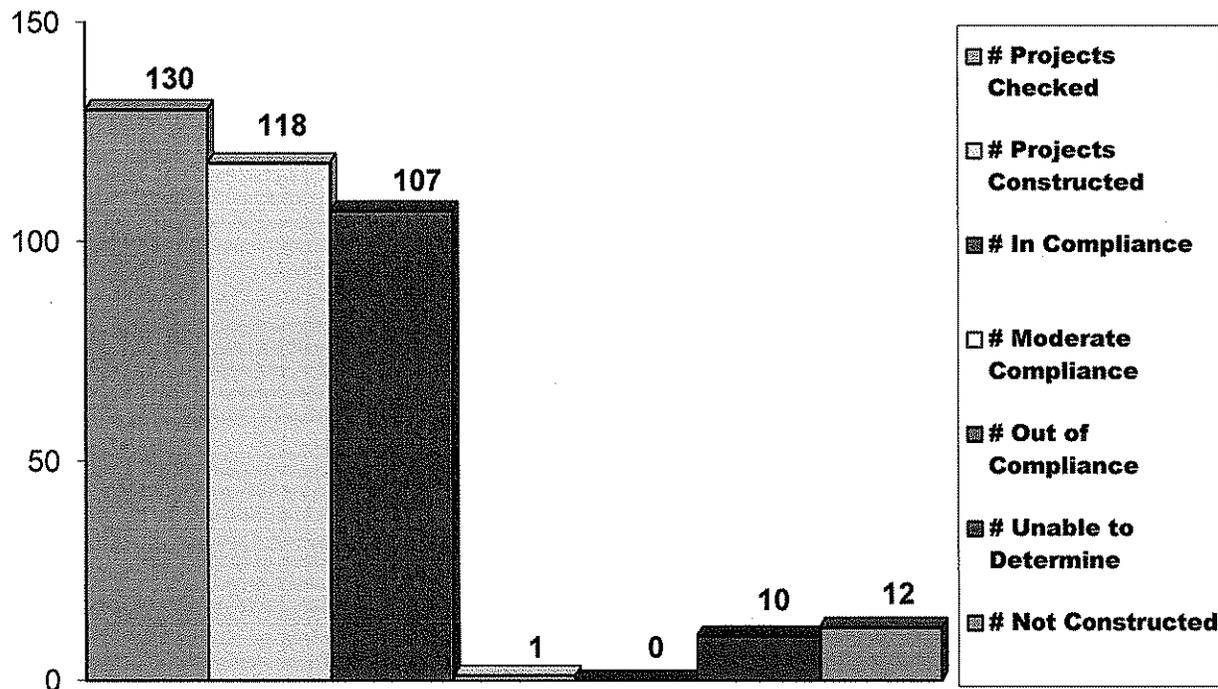


Figure 6 – Inspections for randomly selected wetland permits issued in 2012.

2011 Inspections

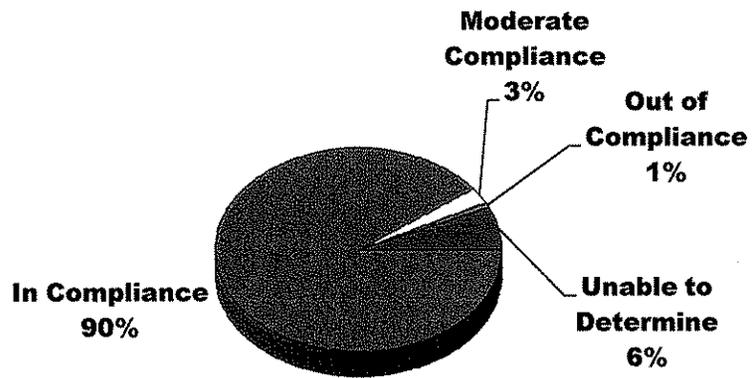
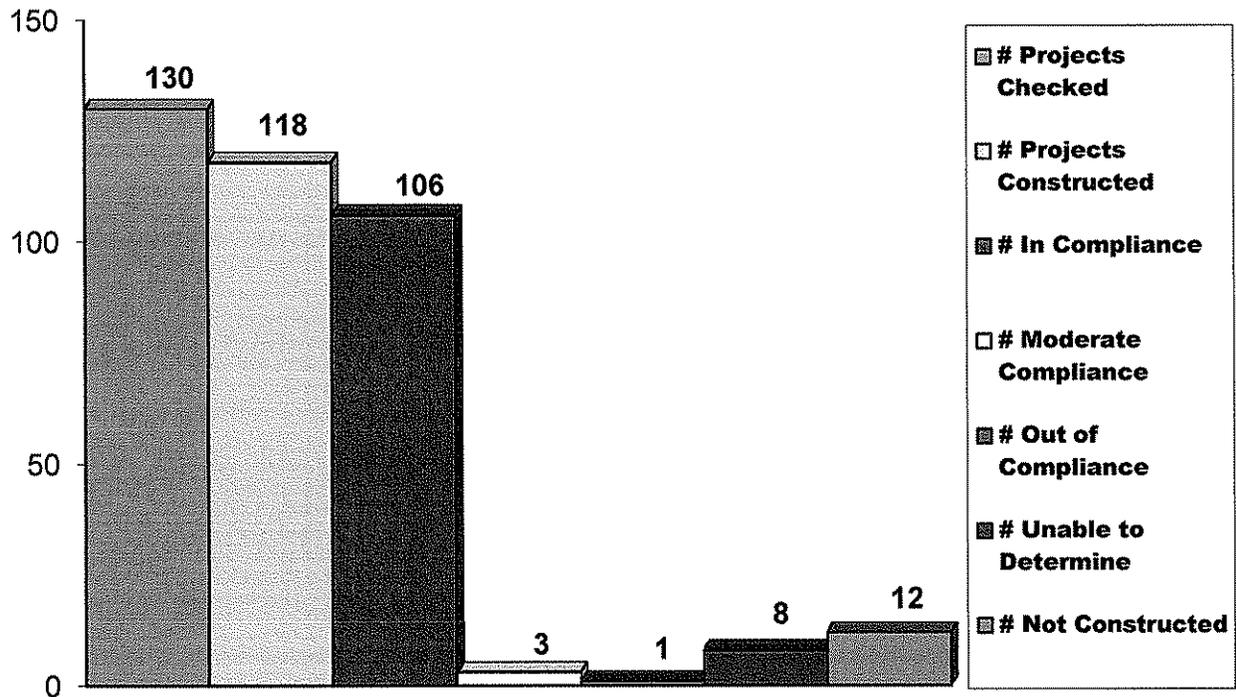


Figure 7 – Inspections for randomly selected wetland permits issued in 2011.

2010 Inspections

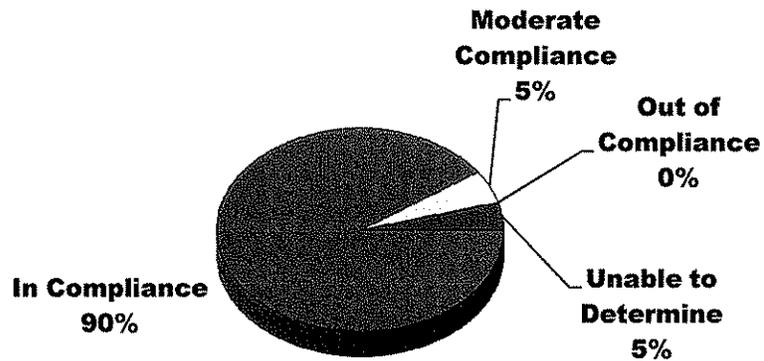
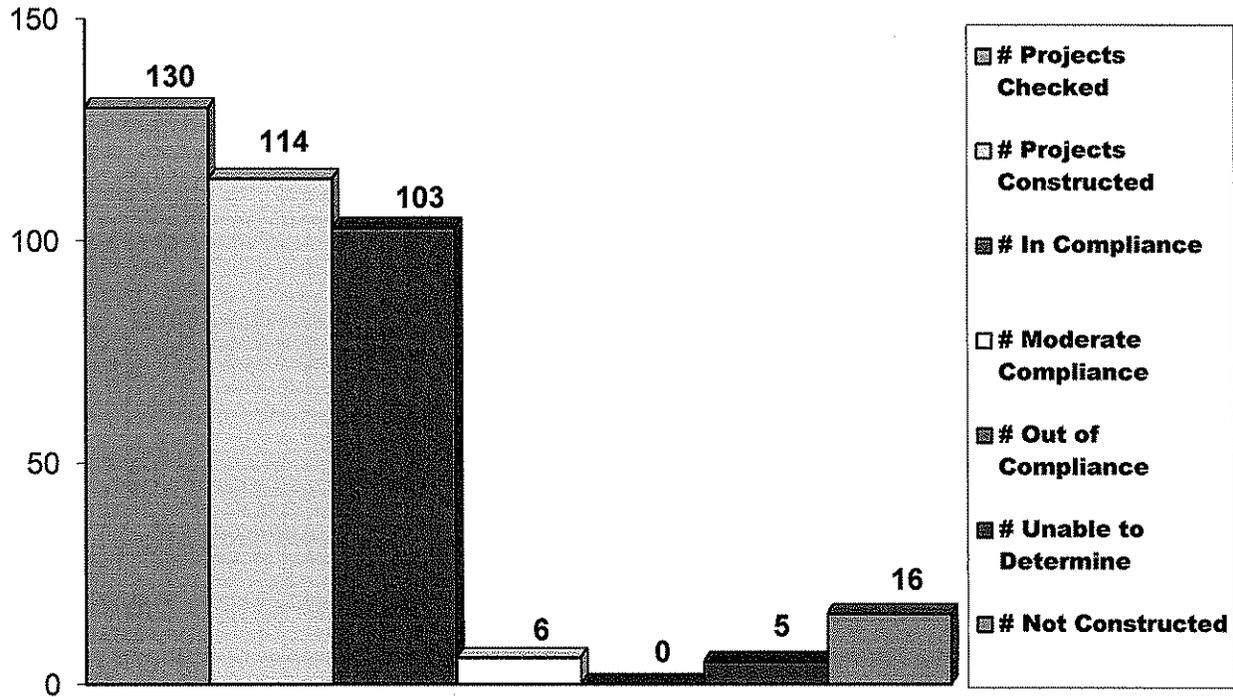


Figure 8 – Inspections for randomly selected wetland permits issued in 2010.

2009 Inspections

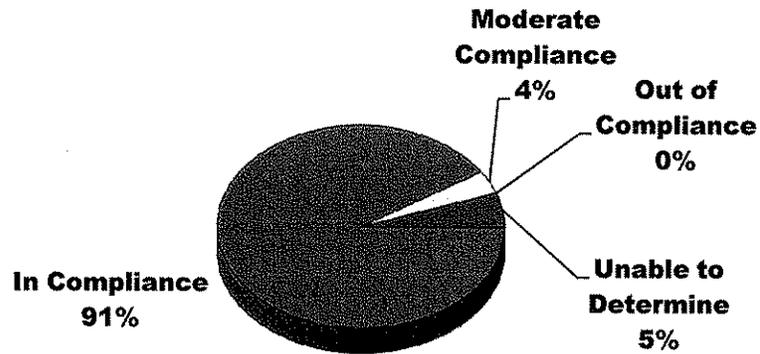
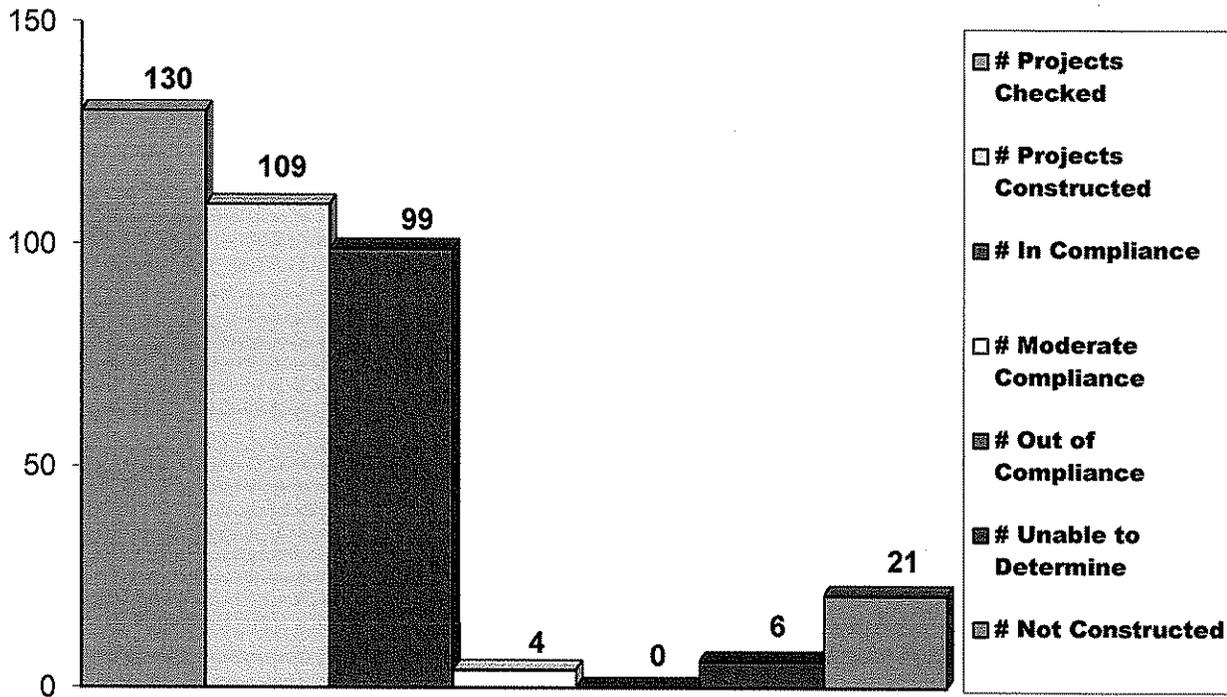


Figure 9 – Inspections for randomly selected wetland permits issued in 2009.

2008 Inspections

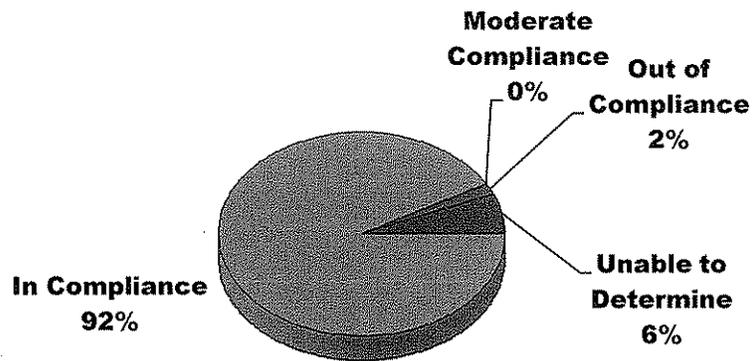
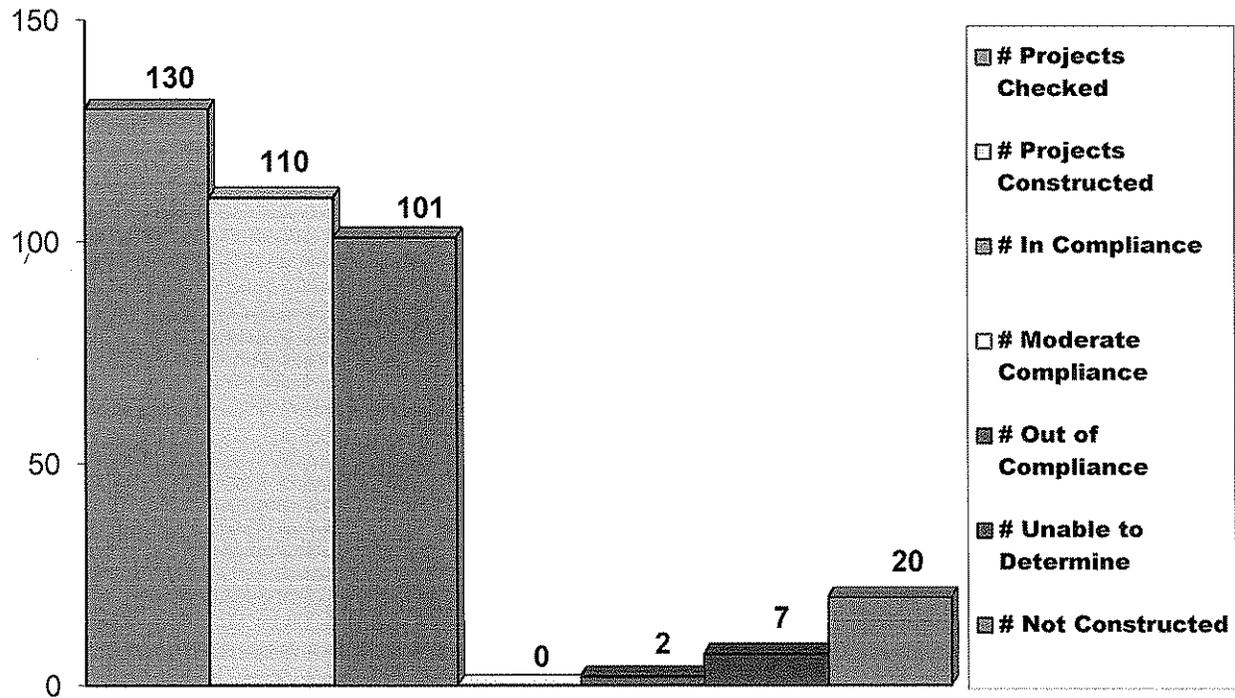


Figure 10 – Inspections for randomly selected wetland permits issued in 2008.

2007 Inspections

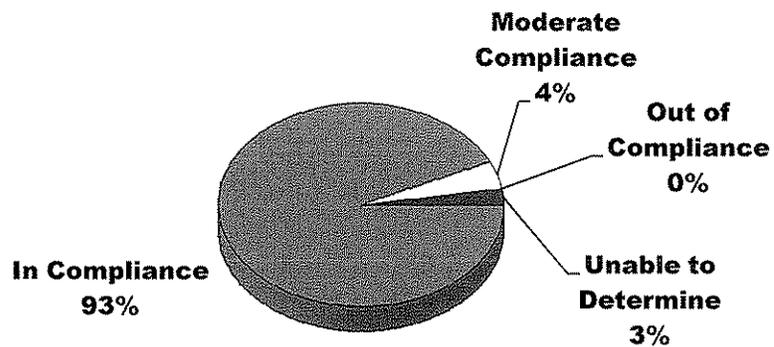
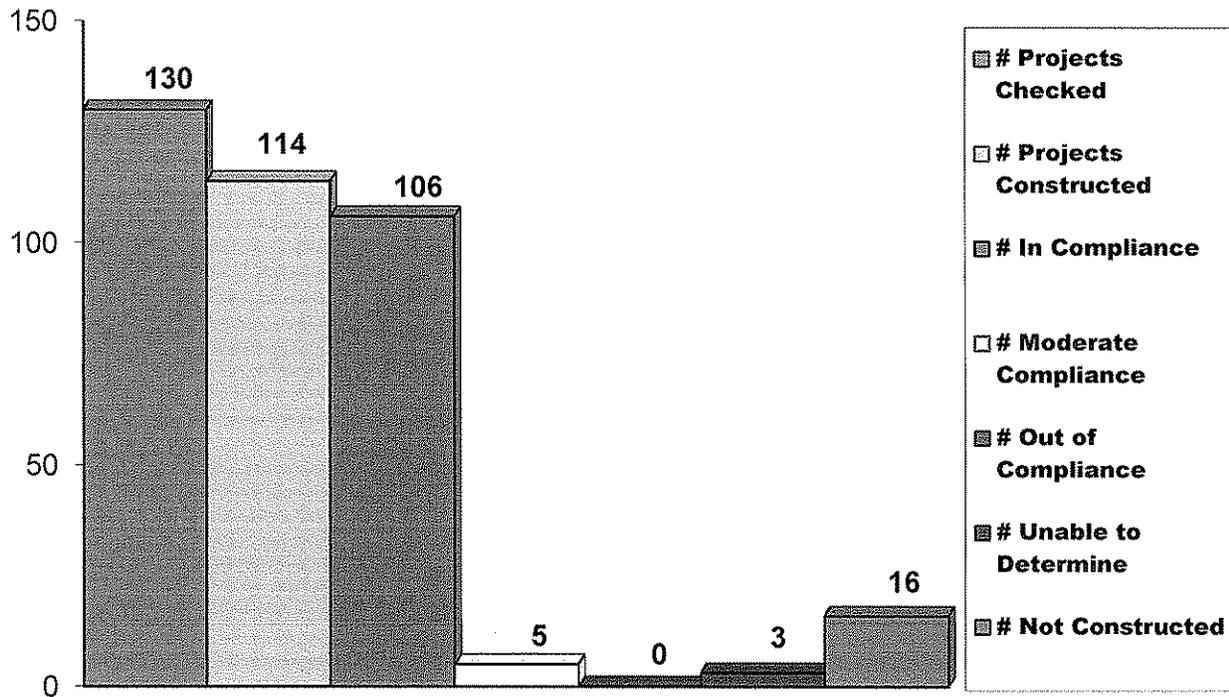


Figure 11 – Inspections for randomly selected wetland permits issued in 2007.

2006 Inspections

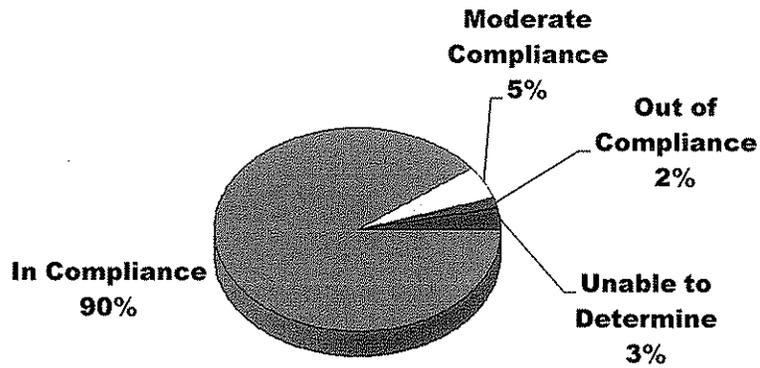
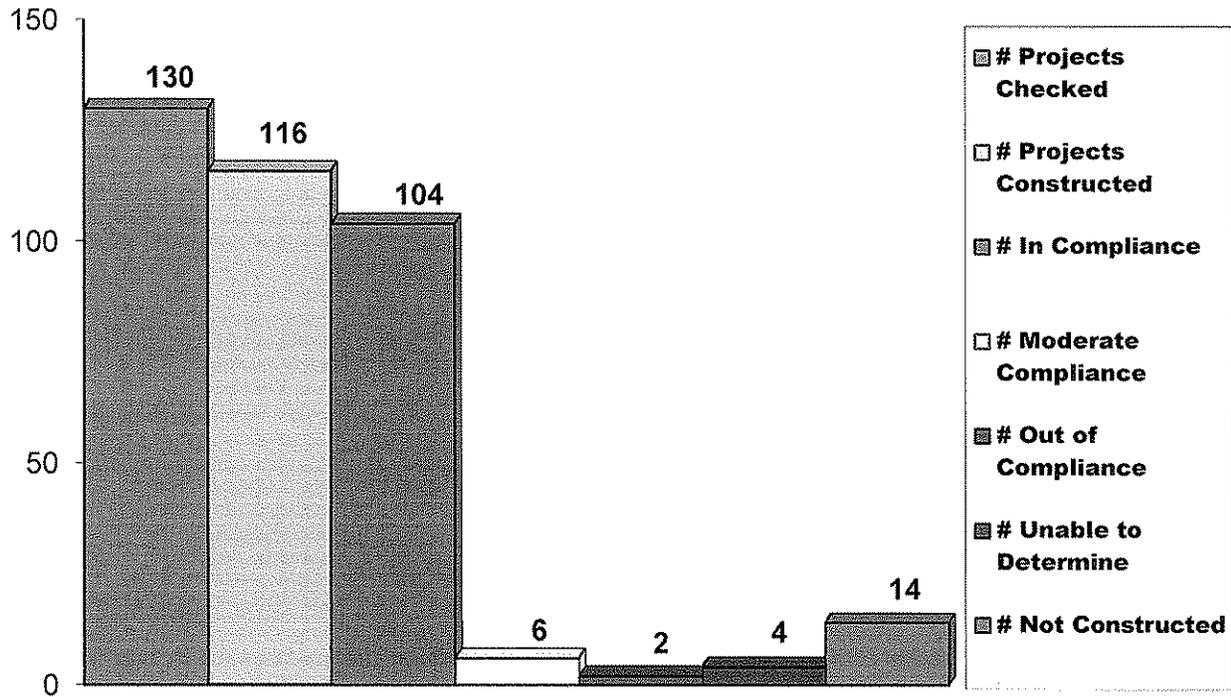


Figure 12 – Inspections for randomly selected wetland permits issued in 2006.

2005 Inspections

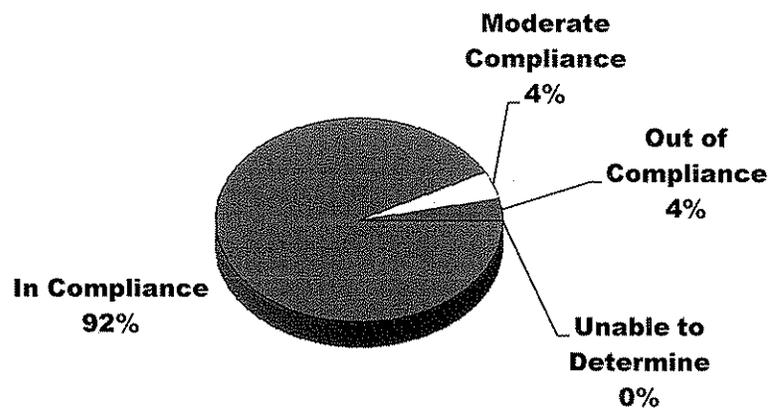
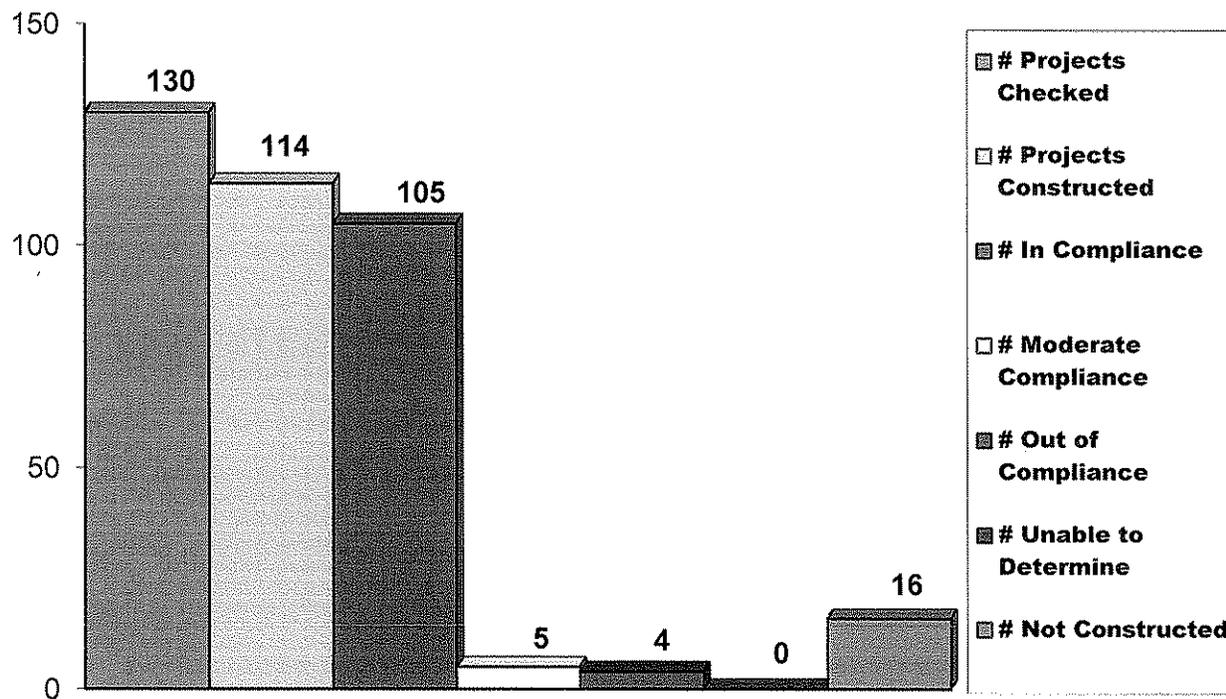


Figure 13 – Inspections for randomly selected wetland permits issued in 2005.

2004 Inspections

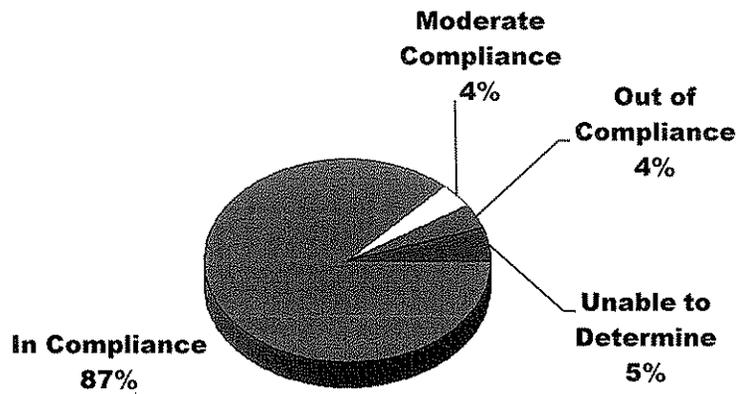
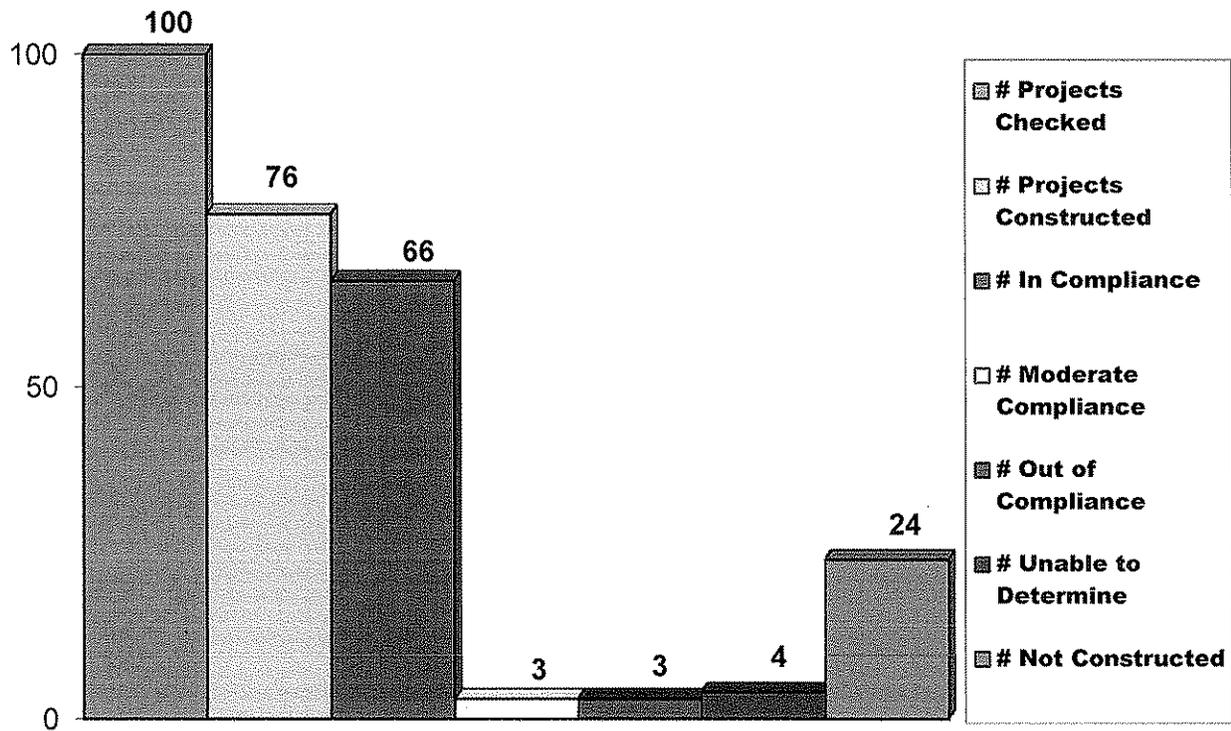


Figure 14 – Inspections for randomly selected wetland permits issued in 2004.

2003 Inspections

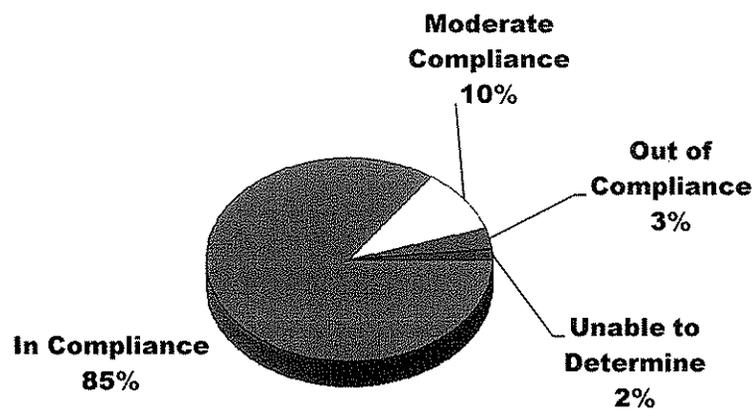
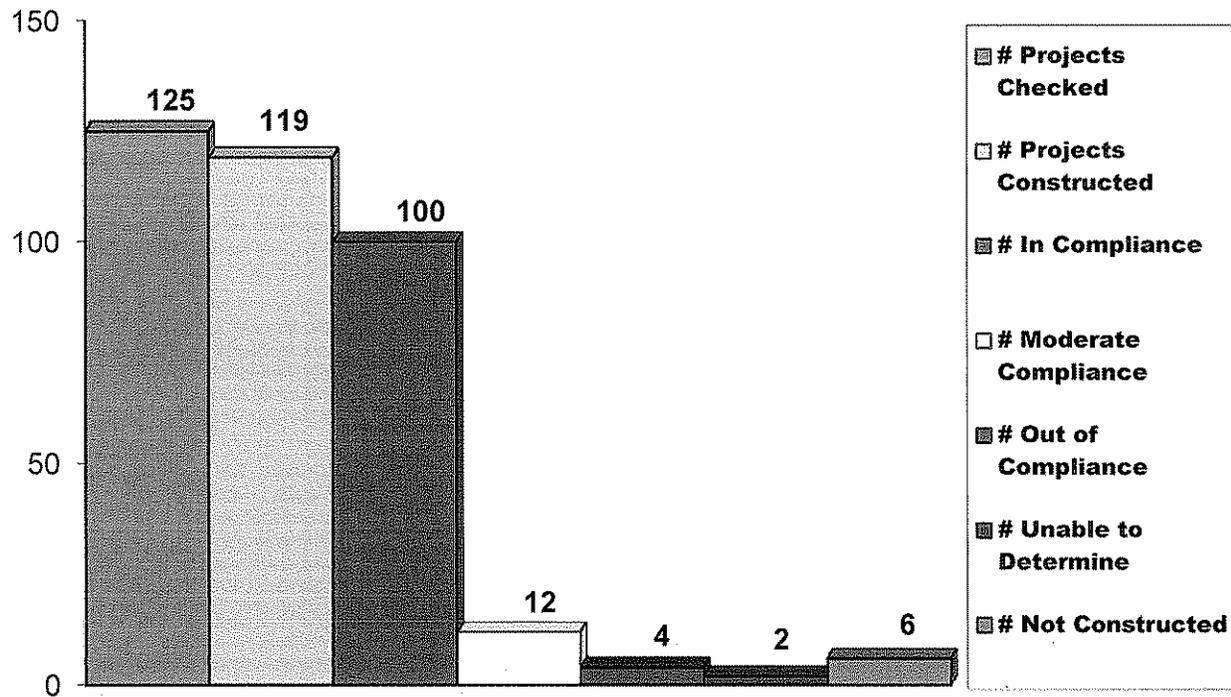


Figure 15 – Inspections for randomly selected wetland permits issued in 2003.

2002 Inspections

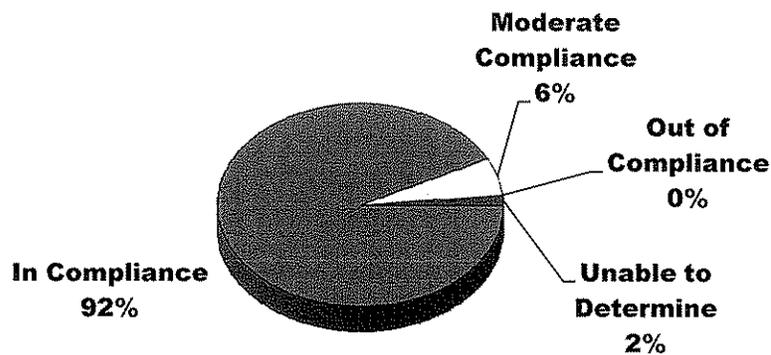
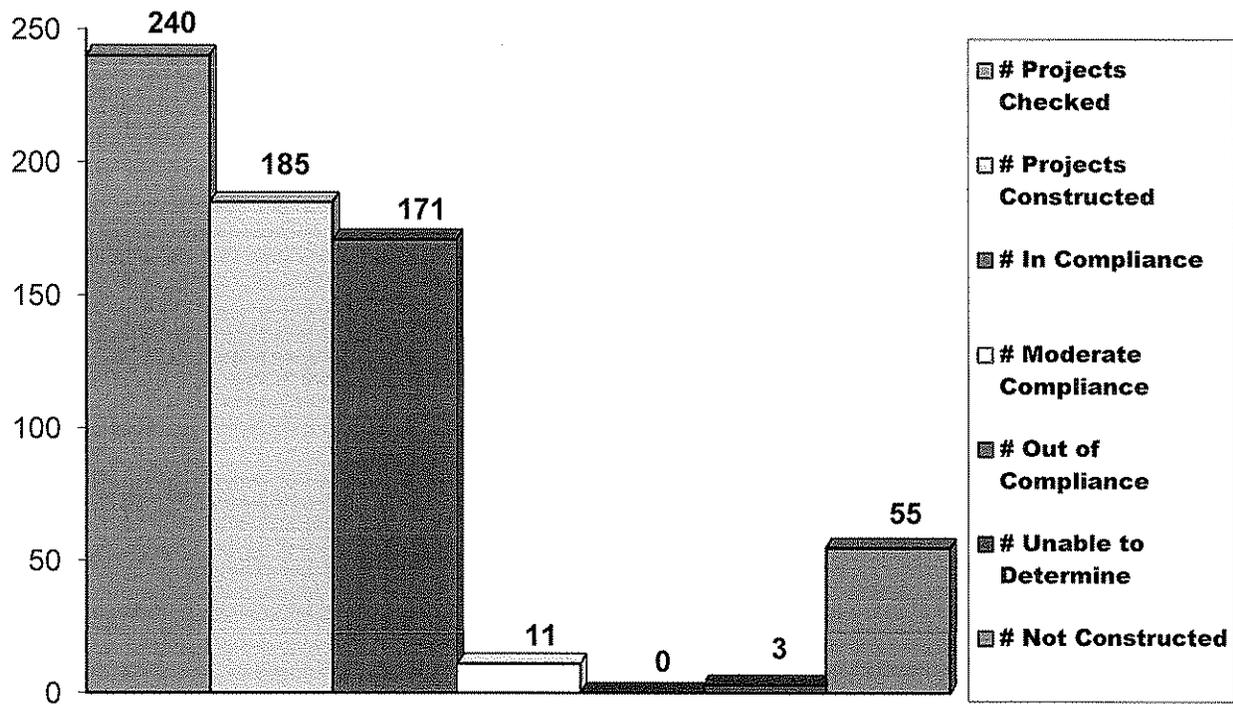


Figure 16 – Inspections for randomly selected wetland permits issued in 2002.

2001 Inspections

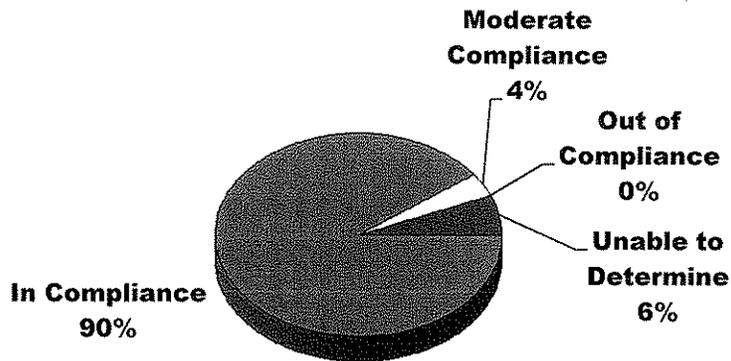
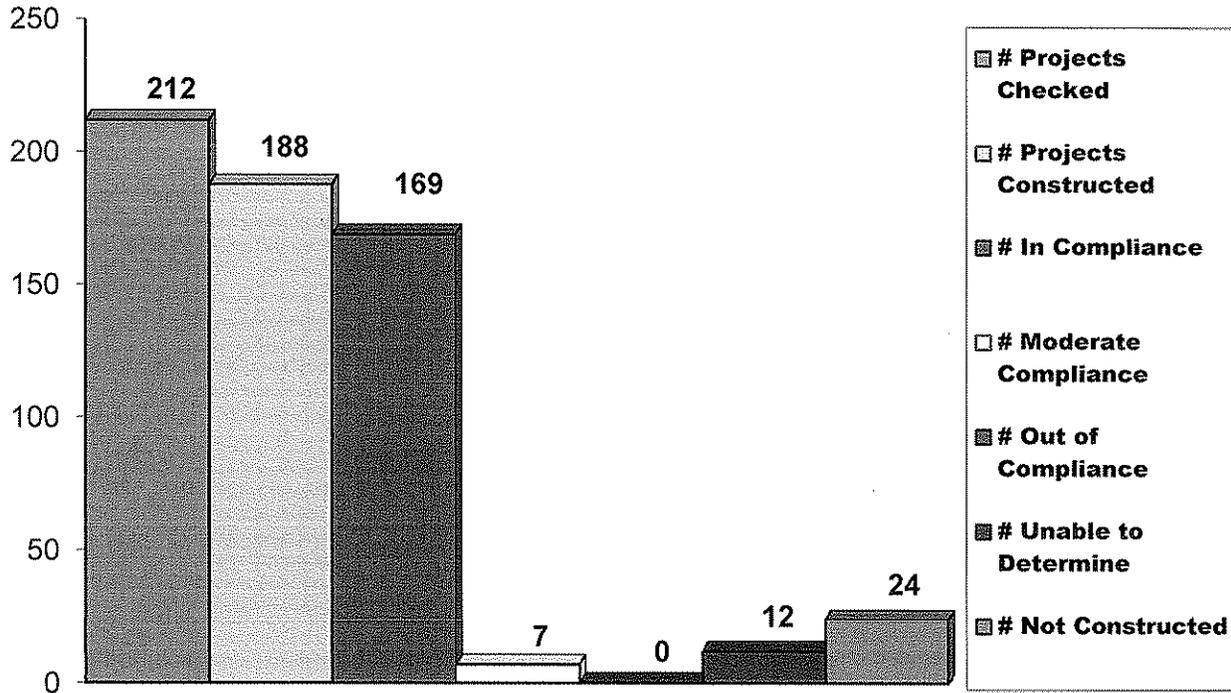


Figure 17 – Inspections for randomly selected wetland permits issued in 2001.

2000 Inspections

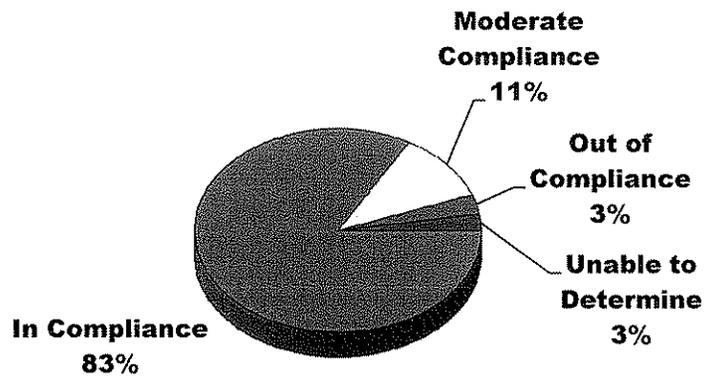
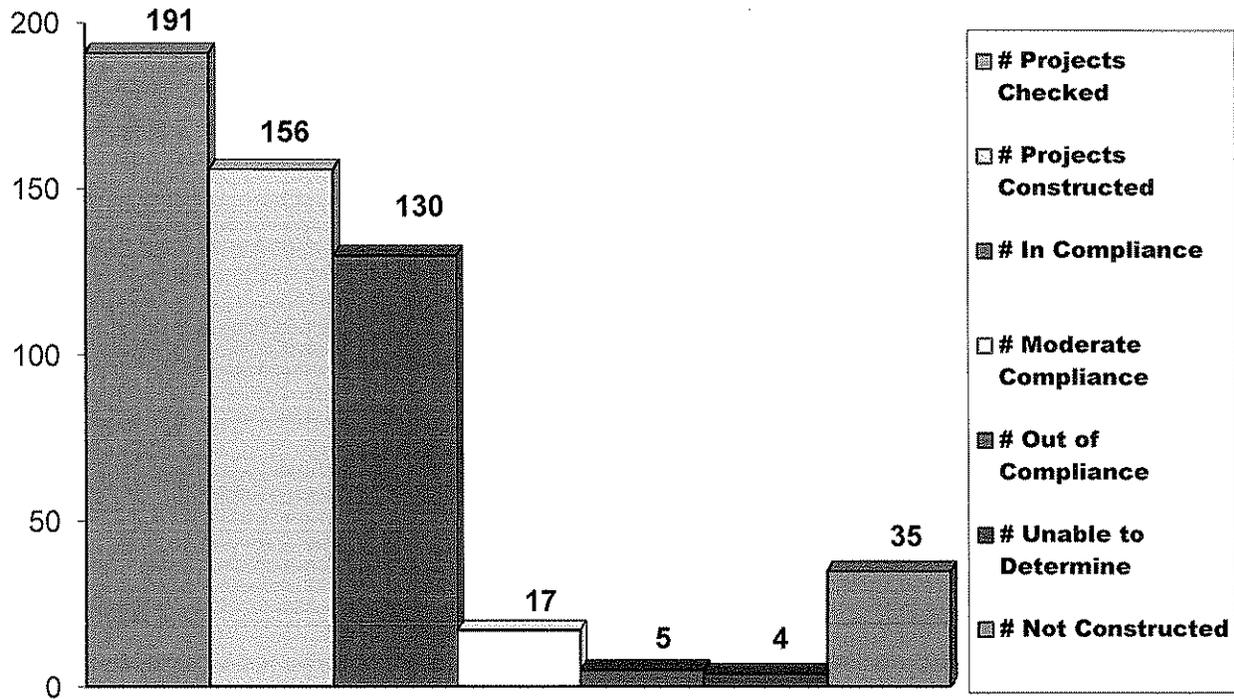


Figure 18 – Inspections for randomly selected wetland permits issued in 2000.

1999 Inspections

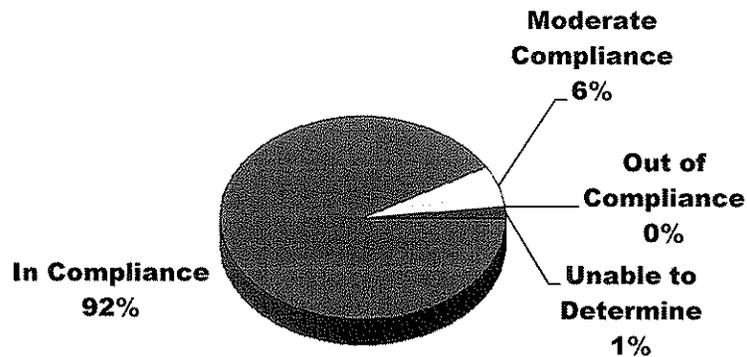
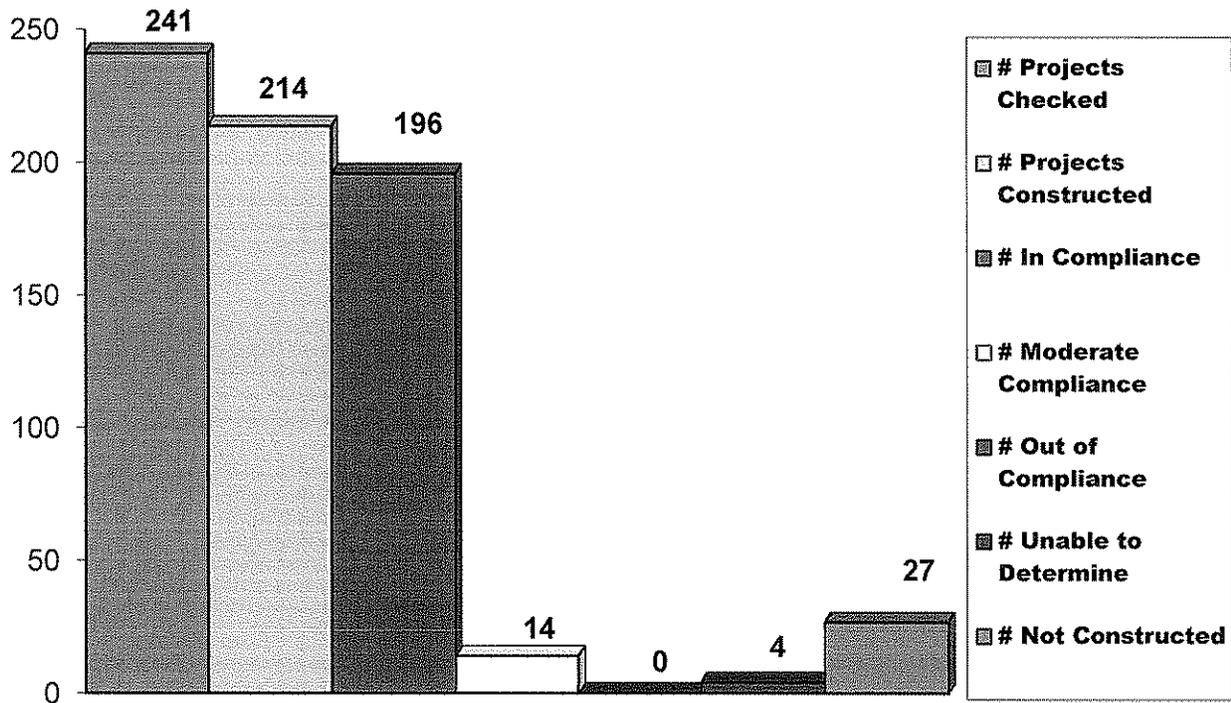


Figure 19 – Inspections for randomly selected wetland permits issued in 1999.

1998 Inspections

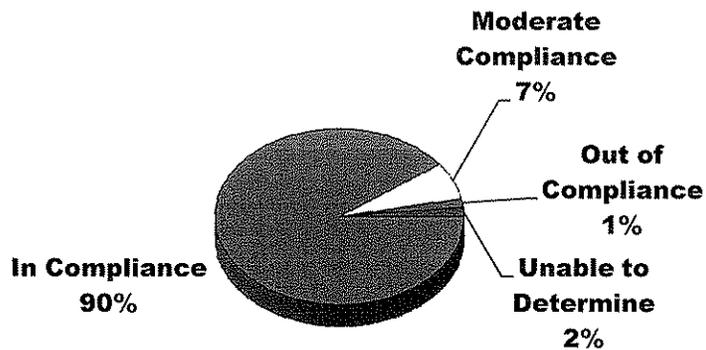
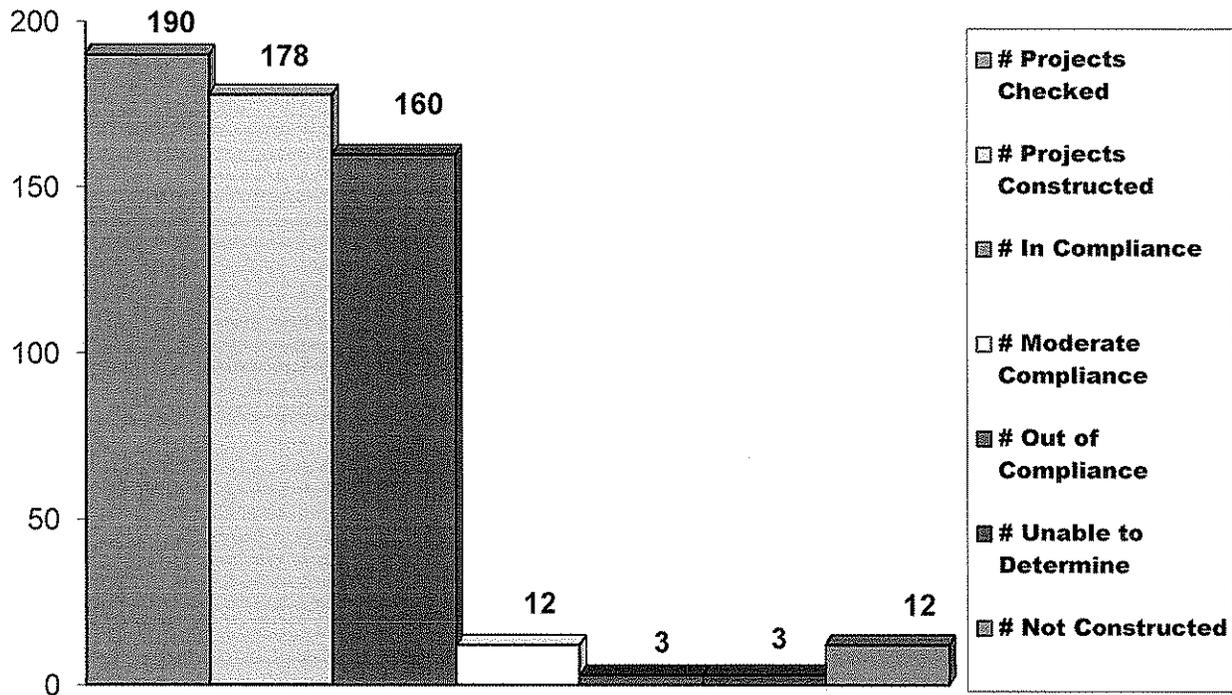


Figure 20– Inspections for randomly selected wetland permits issued in 1998.

1997 Inspections

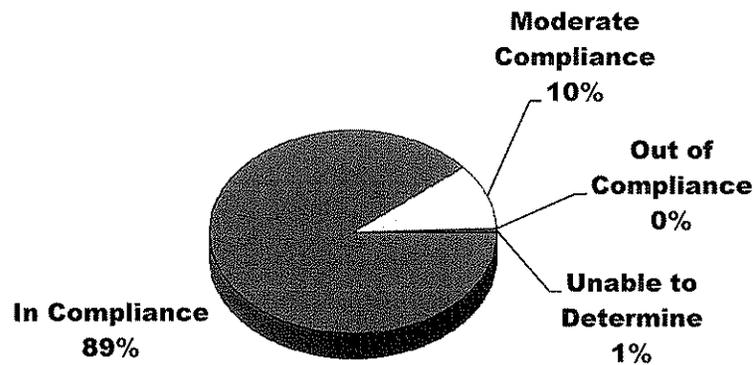
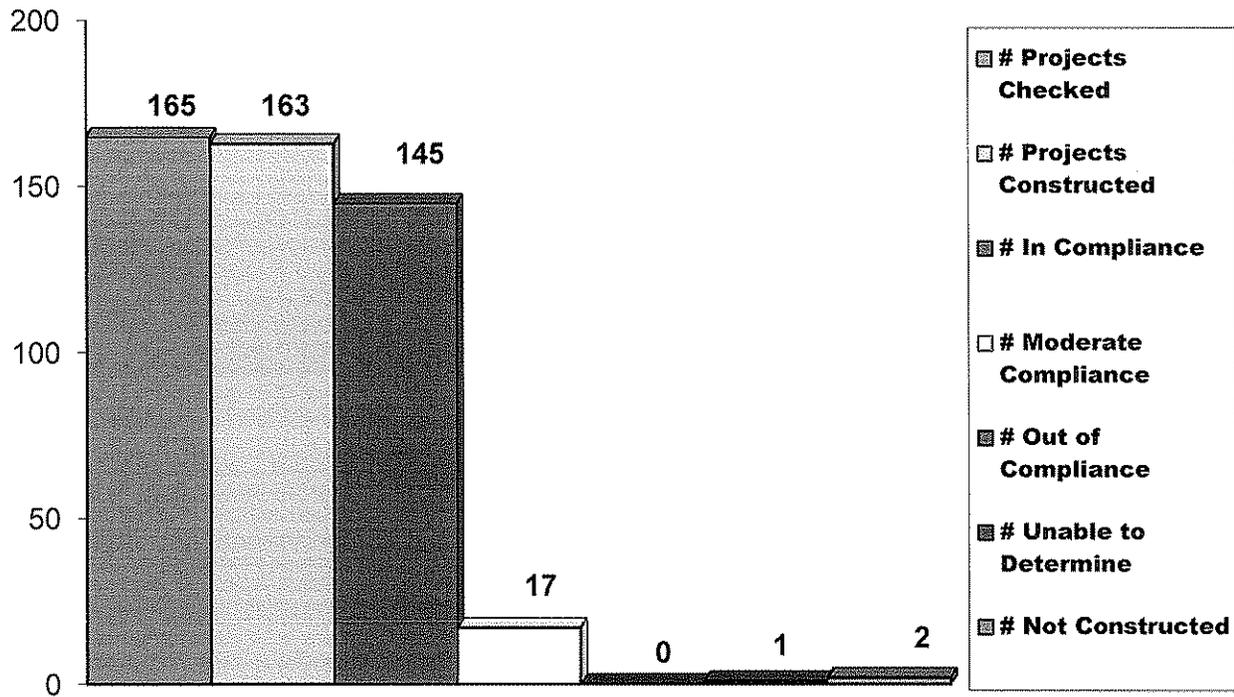


Figure 21 – Inspections for randomly selected wetland permits issued in 1997.

1996 Inspections

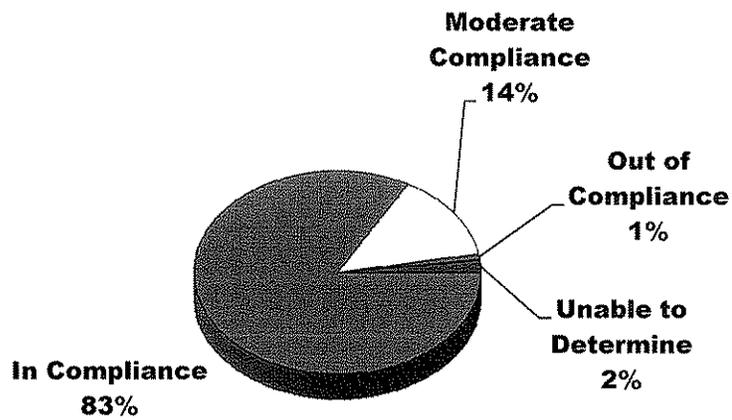
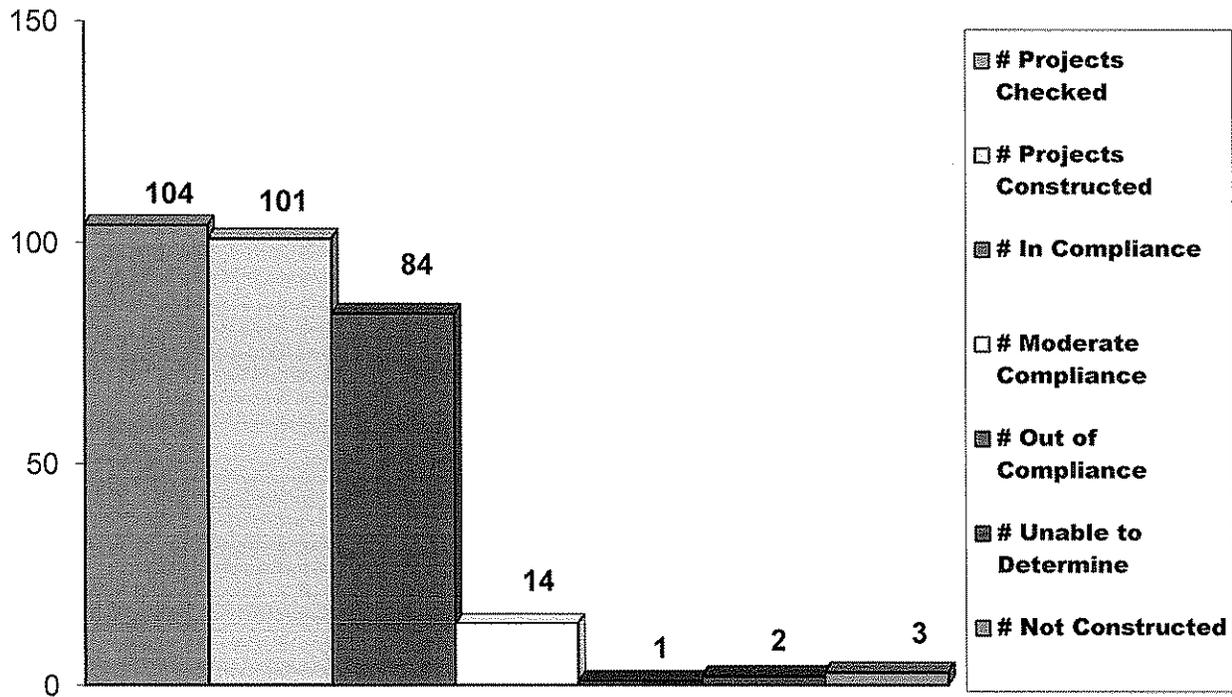


Figure 22 – Inspections for randomly selected wetland permits issued in 1996.

1995 Inspections

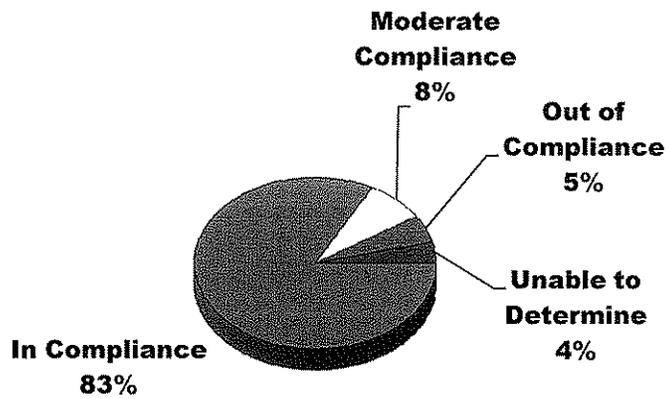
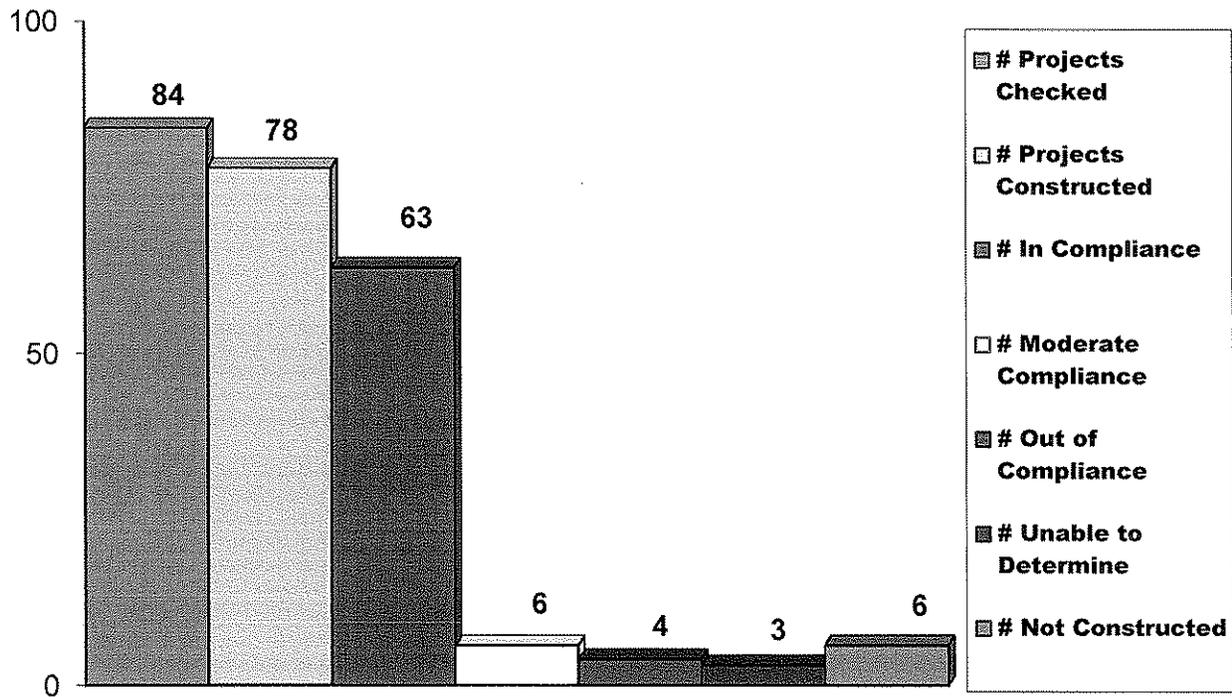


Figure 23 – Inspections for randomly selected wetland permits issued in 1995.

1994 Inspections

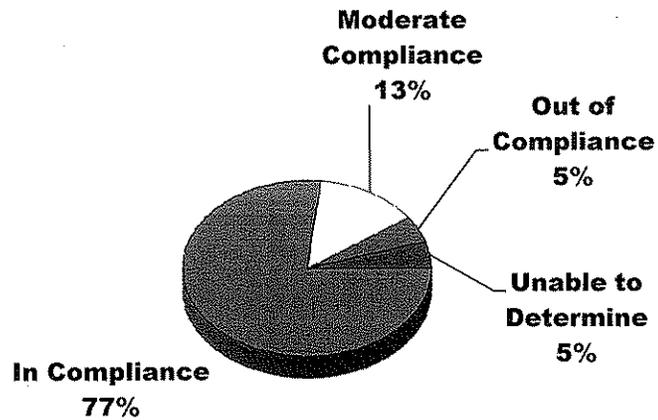
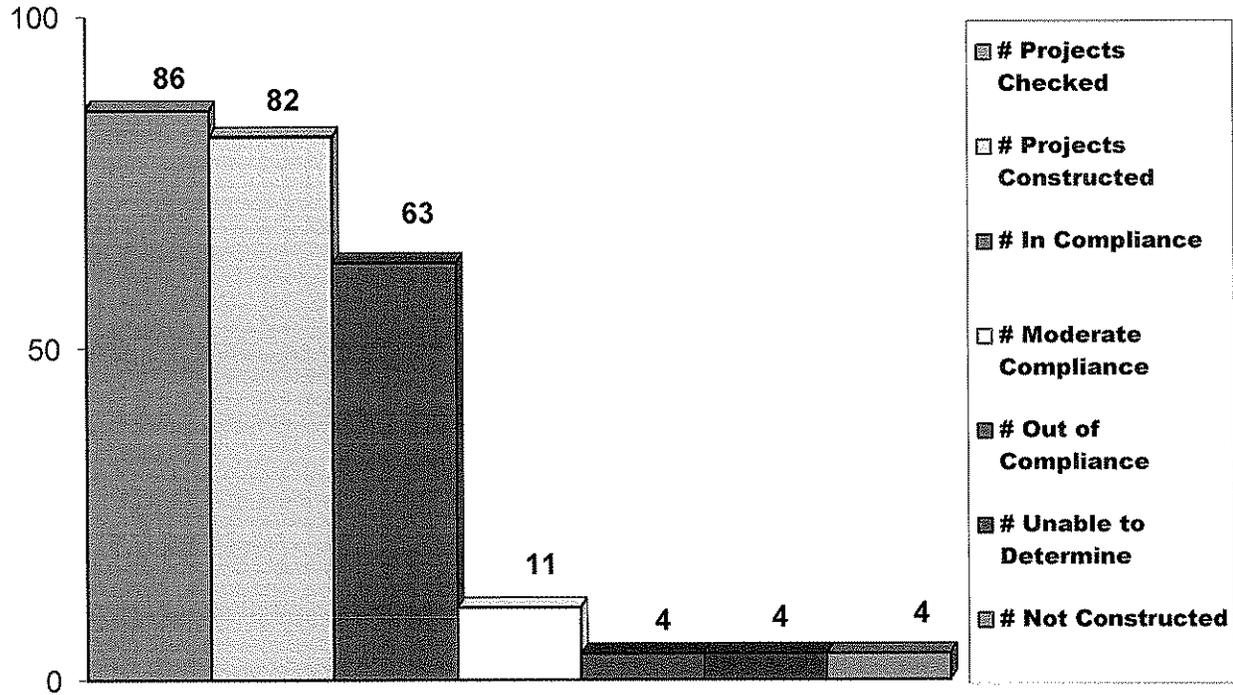


Figure 24 – Inspections for randomly selected wetland permits issued in 1994.

1993 Inspections

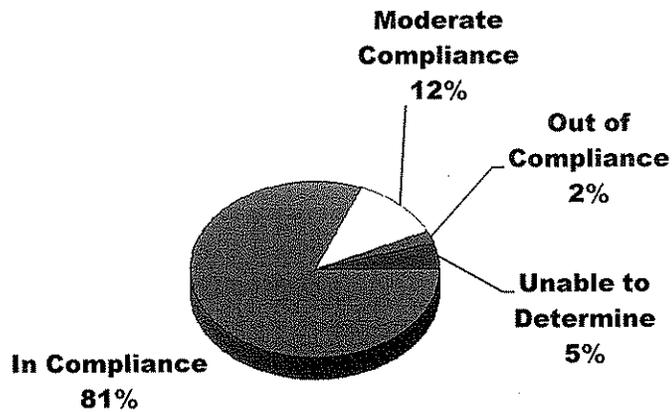
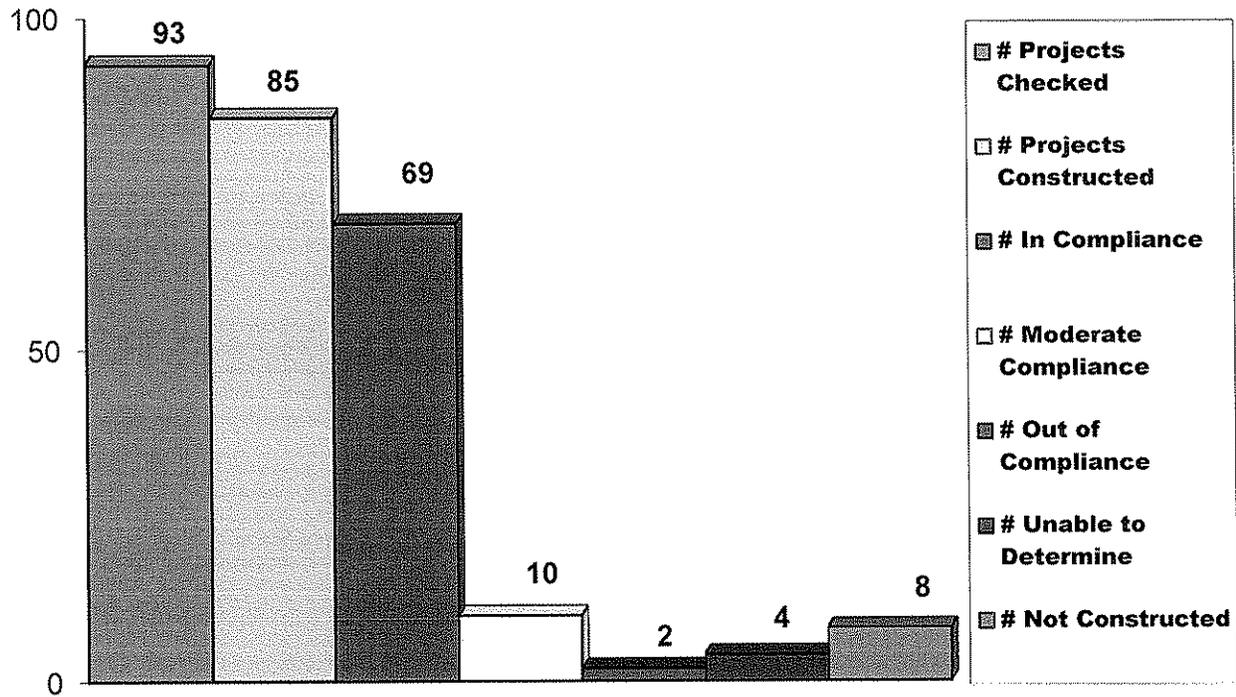


Figure 25 – Inspections for randomly selected wetland permits issued in 1993.

1992 Inspections

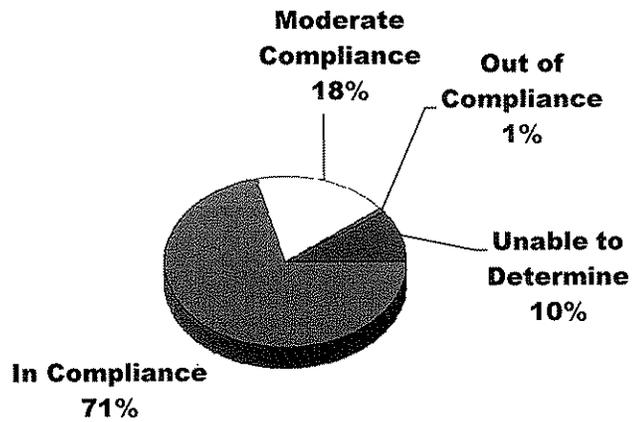
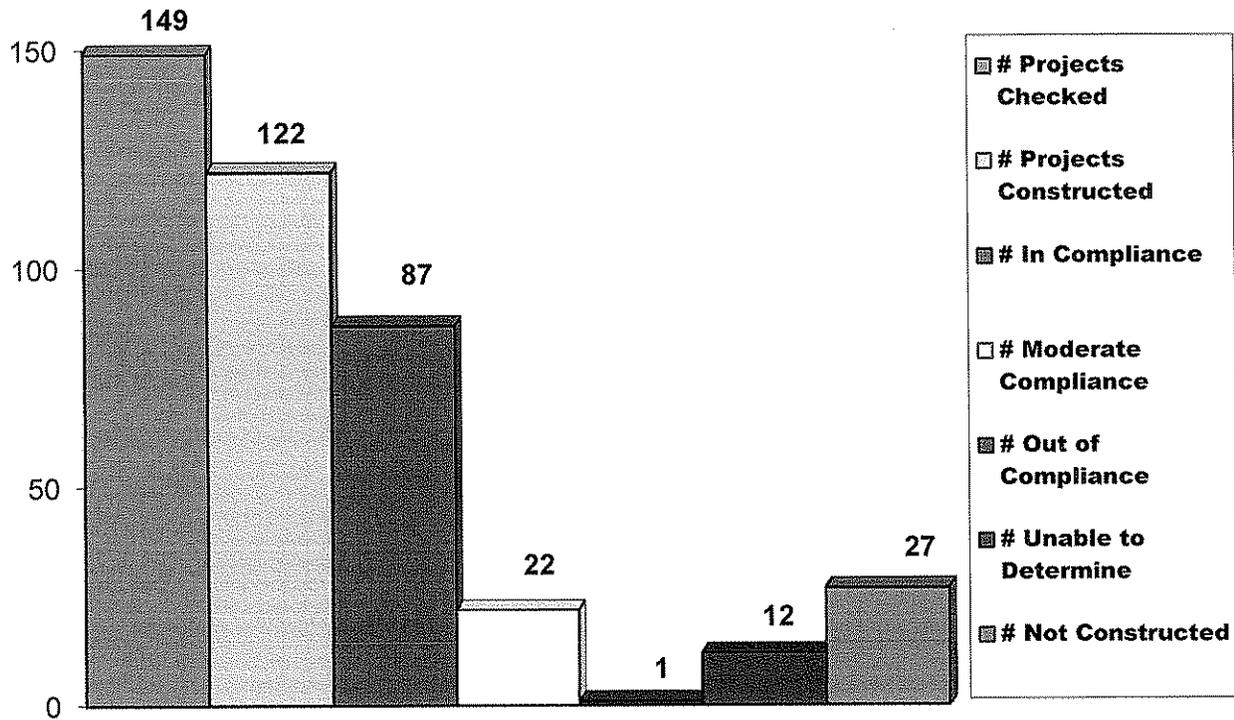


Figure 26-- Inspections for randomly selected wetland and VMRC subaqueous permits issued in 1992.

1991 Inspections

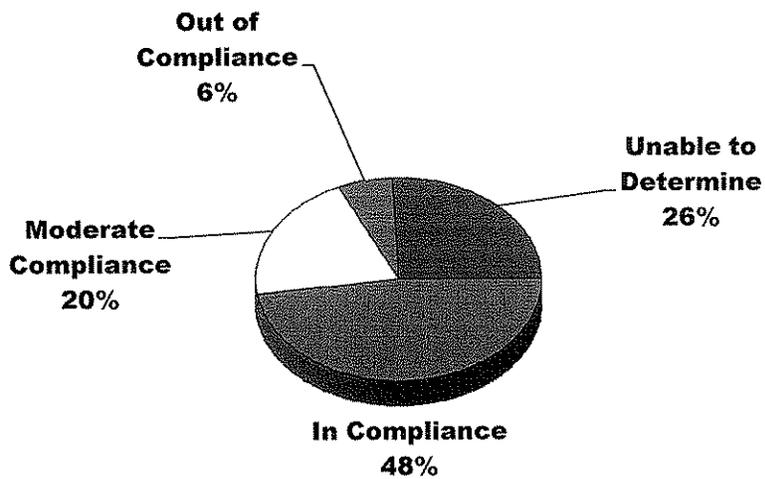
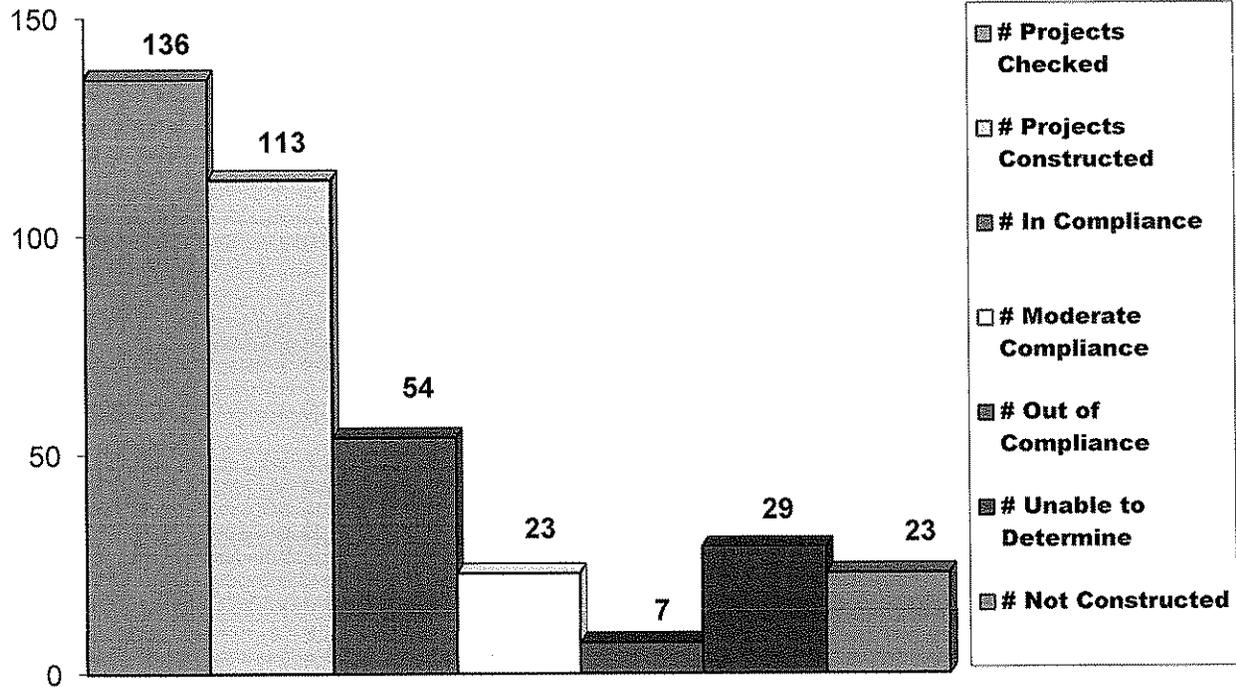


Figure 27 – Inspections for randomly selected wetland and VMRC subaqueous permits issued in 1991.

1990 Inspections

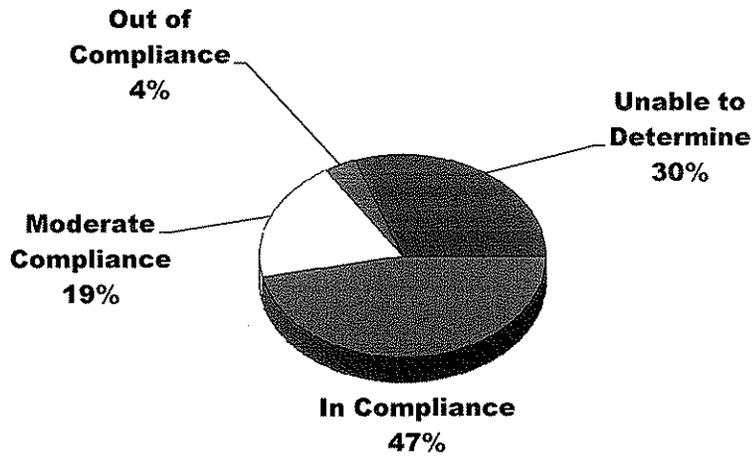
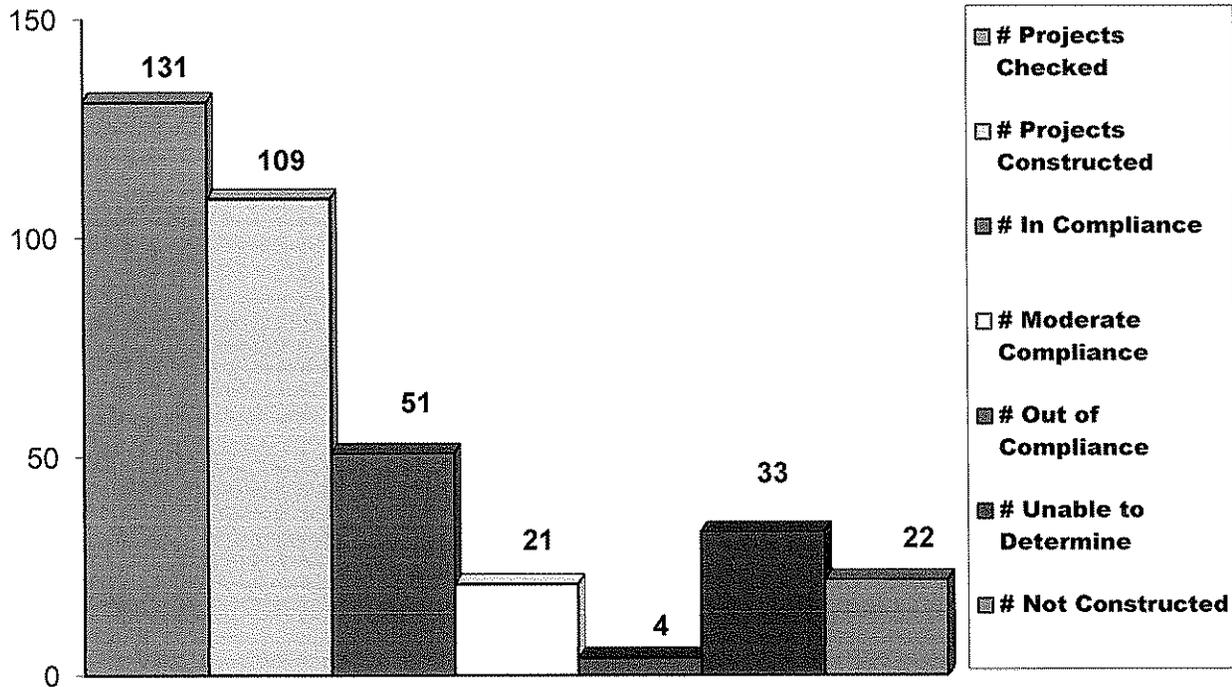


Figure 28 – Inspections for randomly selected wetland and VMRC subaqueous permits issued in 1990.

1989 Inspections

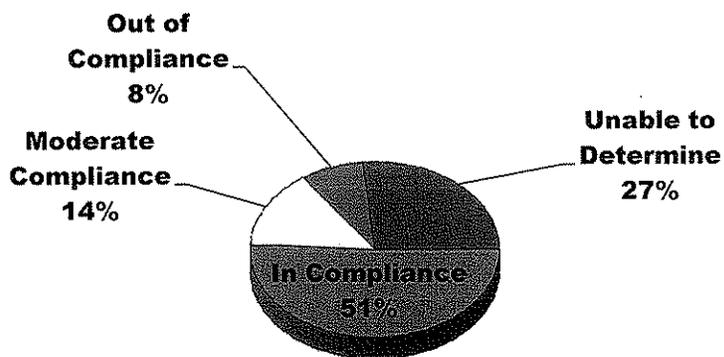
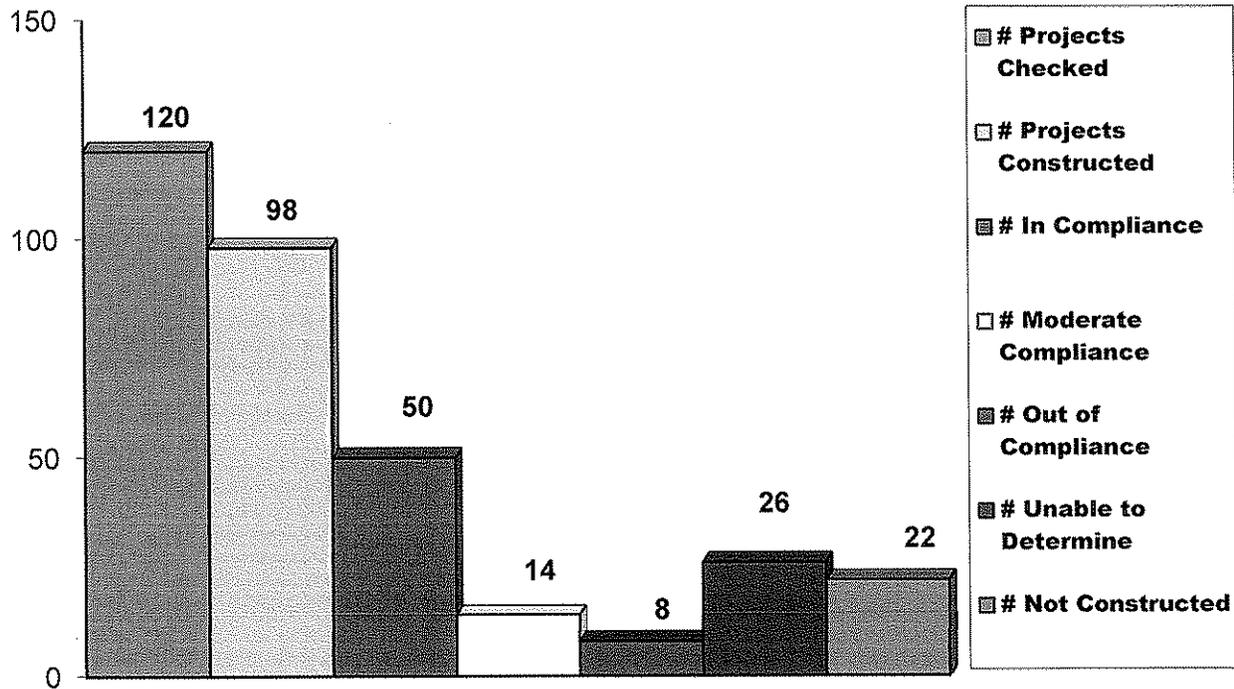


Figure 29 – Inspections for randomly selected wetland and VMRC subaqueous permits issued in 1989.

Table 1

Number of projects selected for the compliance survey in each locality

Locality	Year																									
	14	13	12	11	10	09	08	07	06	05	04	03	02	01	00	99	98	97	96	95	94	93	92	91	90	
Accomack	7	5	7	9	10	6	6	15	5	12	0	14	27	14	10	3	6	6	7	3	5	6	5	5	5	11
Cape Charles	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Charles City	0	0	0	0	1	0	2	0	3	1	0	1	1	1	3	3	1	0	0	0	0	1	3	1	3	1
Chesapeake	0	0	1	3	1	3	4	3	1	6	7	4	5	6	7	10	4	4	5	5	5	5	4	3	5	5
Chesterfield	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	1	1
Colonial Heights	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Essex	4	1	1	3	4	2	2	1	3	1	0	1	4	2	1	3	4	2	1	1	1	1	2	3	3	4
Fairfax	0	0	0	0	0	2	2	0	0	0	0	0	1	1	2	2	0	2	1	2	0	0	2	1	1	1
Fredericksburg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gloucester	9	2	5	8	5	6	5	10	7	11	4	3	4	13	7	12	10	16	6	3	4	2	2	2	8	6
Hampton	1	2	2	0	1	1	1	1	0	4	1	3	8	5	7	2	5	2	2	4	2	6	3	8	3	3
Hopewell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Isle of Wight	1	1	2	1	2	2	0	1	2	1	4	1	3	4	2	3	2	0	0	3	4	2	0	2	0	0
James City	0	0	1	0	1	1	1	1	2	3	3	1	4	8	15	2	4	3	1	5	1	1	3	1	3	3
King and Queen	2	2	4	0	2	1	3	2	2	1	0	0	1	1	0	0	0	0	0	0	0	0	1	3	0	0
King George	0	0	1	0	0	1	0	0	0	1	1	2	5	2	3	0	4	1	0	6	3	1	0	2	2	2
King William	1	0	1	0	0	0	0	3	2	0	0	0	1	3	1	1	1	0	0	0	1	1	0	1	1	1
Lancaster	10	14	15	10	12	14	9	12	7	5	7	6	8	11	10	32	19	23	10	11	7	9	9	9	9	15

Table 1 (Continued)

Number of projects selected for the compliance survey in each locality

89 Locality	Year																						
	14	13	12	11	10	09	08	07	06	05	04	03	02	01	00	99	98	97	96	95	94	93	92
15 Mathews	10	18	6	9	12	10	7	4	7	7	4	2	11	9	10	17	10	8	8	1	3	2	8
0 Middlesex	13	12	11	14	8	9	18	6	9	9	6	8	12	9	9	14	9	11	10	6	5	8	17
0 New Kent	0	0	0	1	0	0	0	0	2	0	1	2	1	0	3	2	4	1	0	3	1	3	1
4 Newport News	0	3	1	1	0	1	0	0	0	2	1	3	3	5	3	5	2	0	0	3	2	1	6
0 Norfolk	6	5	9	6	6	4	3	8	2	9	10	5	8	8	10	10	10	9	7	3	3	4	13
0 Northhampton	4	4	1	4	4	1	2	4	4	3	0	0	7	7	12	2	3	1	2	2	2	2	2
1 Northumberland	25	30	21	26	24	34	22	32	29	15	24	15	46	22	11	40	24	34	12	8	6	6	19
1 Poquoson	0	1	1	0	0	1	1	1	2	4	2	8	1	10	6	3	5	4	2	1	3	3	8
0 Portsmouth	0	1	1	3	2	2	1	0	0	1	3	2	1	6	3	1	2	0	0	1	0	1	0
3 Prince William	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	5	2	0	0	0	1	0	1
5 Richmond County	0	0	0	0	1	0	3	2	1	2	0	1	6	4	2	1	2	1	0	1	2	1	2
0 Stafford	0	0	0	0	2	0	0	2	0	3	1	5	6	5	5	2	4	3	1	3	3	2	3
0 Suffolk	0	0	1	1	1	1	2	4	6	3	3	5	2	3	10	3	1	0	1	1	0	3	3
3 Surry	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	1	0	0	0	0	1	0
1 Virginia Beach	29	17	20	22	16	12	20	10	19	15	15	12	35	30	15	23	30	14	14	9	10	7	11
1 West Point	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0
1 Westmoreland	5	8	11	9	13	13	12	6	11	7	0	18	16	15	10	24	14	8	11	5	6	10	14
9 York	3	4	7	1	2	2	3	2	3	3	3	3	13	6	9	14	6	12	4	6	6	2	4

Table 2

Level of compliance for constructed projects

	91	90	89	14	13	12	11	10	09	08	07	06	05	04	03	02	01
3 # of Projects Reviewed	9	3		130	130	130	130	130	130	130	130	130	130	100	125	240	212
8 # of Projects Constructed	10	7	8	112	113	118	118	114	109	110	114	116	114	76	119	185	188
0 % of Projects Reviewed	0	1	0	86%	87%	91%	91%	88%	84%	85%	88%	89%	88%	76%	95%	77%	89%
0 # in Compliance	5	4	0	96	106	107	106	103	99	101	106	104	105	66	100	171	169
8 % of Projects Constructed	7	8	8	86	82	91%	90%	90%	91%	91%	93%	90%	92%	87%	85%	93%	90%
1 # in Moderate Compliance	1	3	1	3	0	1	3	6	4	0	5	6	5	3	12	11	7
19 % of Projects Constructed	8	14	19	3%	0%	1%	3%	5%	4%	0%	4%	5%	4%	4%	10%	6%	4%
1 # Out of Compliance	4	2	1	0	0	0	1	0	0	2	0	2	4	3	4	0	0
0 % of Projects Constructed	5	0	0	0%	0%	0%	1%	0%	0%	2%	0%	2%	4%	4%	3%	0%	0%
1 # Compliance Indeterminable	0	1	1	13	7	10	8	5	6	7	3	4	0	4	2	3	12
0 % of Projects Constructed	3	1	0	10%	6%	8%	6%	4%	6%	7%	3%	3%	0%	5%	2%	1%	6%
	3	4	3														
	1	0	1														
	1	0	0														
	15	22	20														
	1	0	0														
	14	5	7														
	2	1	4														

Table 2 (Continued)

Level of compliance for constructed projects

<u>Year</u>	<u>00</u>	<u>99</u>	<u>98</u>	<u>97</u>	<u>96</u>	<u>95</u>	<u>94</u>	<u>93</u>	<u>92</u>	<u>91</u>	<u>90</u>	<u>89</u>
	191	241	190	165 # of Projects Reviewed	104	84	86	93	149	136	131	120
	156	214	178	163 # of Projects Constructed	101	78	82	85	122	113	109	98
	82%	88%	94%	98% % of Projects Reviewed	97%	93%	95%	91%	82%	83%	83%	82%
	130	196	160	145 # in Compliance	84	63	63	69	87	54	51	50
	83%	92%	90%	89% % of Projects Constructed	83%	83%	77%	81%	71%	48%	47%	51%
	17	14	12	17 # in Moderate Compliance	14	6	11	10	22	23	21	14
	11%	7%	6%	10% % of Projects Constructed	14%	8%	13%	12%	18%	20%	19%	14%
	5	0	3	0 # Out of Compliance	1	4	4	2	1	7	4	8
	3%	0%	2%	0% % of Projects Constructed	1%	5%	5%	2%	1%	6%	4%	8%
	4	4	3	1 # Compliance Indeterminable	2	3	4	4	12	29	33	26
	3%	1%	2%	1% % of Projects Constructed	2%	4%	5%	5%	10%	26%	30%	27%

Table 3

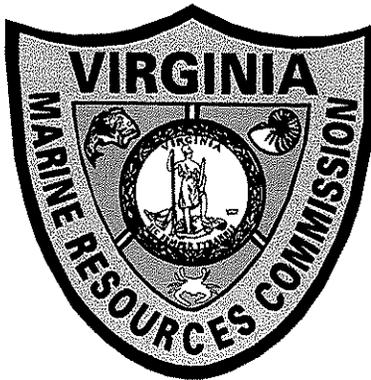
Wetland Board Compliance monitoring in each Locality.

Locality	Program			Project Checked	
	Formal	Informal	all	random	none
Accomack		x		x	
Cape Charles		x		x	
Charles City		x	x		
Colonial Heights		x		x	
Essex		x		x	
Fairfax		x	x		
Fredericksburg					x
Gloucester	x		x		
Hampton	x		x		
Hopewell		x		x	
Isle of Wight		x		x	
James City	x		x		
King & Queen	x		x		
King George		x		x	
King William		x		x	
Lancaster		x	x		
Mathews	x		x		
Middlesex	x			x	
New Kent		x		x	
Newport News		x		x	
Norfolk		x		x	
Northampton		x		x	
Northumberland		x		x	
Poquoson	x		x		
Portsmouth		x		x	
Prince William		x		x	
Richmond Co	x		x		
Stafford	x		x		
Suffolk	x		x		
Surry		x		x	
Virginia Beach	x			x	
West Point	x		x		
Westmoreland		x		x	
York	x		x		

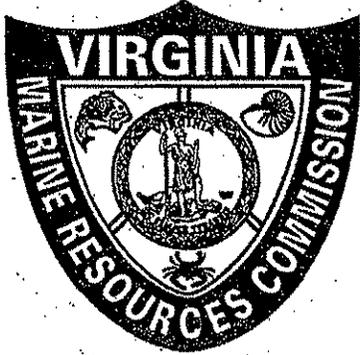
ATTACHMENT A

Permit Compliance and Inspection Program: Findings and Guidance Document

**VIRGINIA MARINE RESOURCES
COMMISSION
Permit Compliance
And
Inspection Program**



November 2016



Habitat Management Division - Special Report
December 1991

Permit Compliance and Inspection Program: Findings and Guidance Document

Robert C. Neikirk

INTRODUCTION

The Virginia Marine Resources Commission ("the Commission" or "VMRC"), in conformance with Section 62.1-3 of the Code of Virginia, is the State agency responsible for issuing permits for encroachments in, on, or over State-owned submerged lands throughout the Commonwealth. The Commission has possessed this regulatory authority since 1962. We currently process over 2,000 applications and issue nearly 500 permits annually. Virginia is a "low water state" and assumes jurisdiction of submerged lands channelward of the mean low water mark in tidal waters, and has regulatory authority channelward of the ordinary high water mark on most naturally occurring nontidal perennial streams.

In addition to managing the Commonwealth's submerged lands, the Commission also regulates certain activities in tidal wetlands and coastal primary sand dunes pursuant to Chapters 2.1 and 2.2 of Title 62.1 of the Code of Virginia. Local governments have the option to adopt and administer the ordinance. VMRC asserts original jurisdiction in those Tidewater localities which have not assumed local regulation through the adoption of the model wetlands and dunes ordinances. Even where locally adopted and implemented, the Commission retains oversight responsibilities for all decisions made by those local wetlands boards.

The regulatory activities conducted by the Commission and the 34 local wetlands boards are integral core components of Virginia's approved Coastal Zone Management Program. The permit review processes used by the Commission and these local wetlands boards ensures that necessary economic development is permitted in a manner which

minimizes adverse impacts to the valuable natural resources within our coastal zone.

Permit compliance is a mandatory component of any effective regulatory program. As such, it is essential that the terms and conditions contained in those permit documents be followed if we are to realize the full benefits of the regulatory program. Without such permit compliance, the regulatory process breaks down and serves only to increase bureaucracy.

In July 1990, Senate Bill 183 became law (Ch. 881 Acts of Assembly 1990). This legislation provided the Commission and local wetlands boards with the authority to issue restoration orders and assess civil charges for violations of the applicable subaqueous, wetlands and sand dune statutes. An ability to accurately determine and monitor compliance with permit requirements is essential if the agency and wetlands boards are to effectively carry out the intent of this legislation.

Unfortunately, Commission staff does not currently have a standardized procedure for monitoring permit compliance. Instead, the staff engineer assigned responsibility for a particular locality will attempt to inspect projects which are under construction or have been recently completed. Quite often such compliance inspections are in response to the receipt of an inquiry or complaint. Additionally, the Commission's marine law enforcement personnel are often aware of permitted projects in their localities and occasionally make site inspections during the performance of their daily duties. In either case, however, only a small percentage of the projects permitted by VMRC are routinely inspected for compliance.

Permits issued by wetlands boards are also not always carefully reviewed for compliance upon project completion. Independent studies conducted by Bradshaw (1990), Hershner et al. (1985) and a survey conducted in conjunction with this project indicate that the extent of permit compliance monitoring by local wetlands boards varies between localities. That effort

This report was funded, in part, by the Virginia Council on the Environment's Coastal Resources Management Program through grant # NA90AA-H-CZ796 of the National Oceanic and Atmospheric Administration under the Coastal Zone Management Act of 1972 as amended.

ranges from rigid compliance monitoring programs to virtually nonexistent monitoring. The level of monitoring is quite often dictated by both the amount of permit activity and available staff time. Therefore, although permit compliance monitoring is an essential element of the regulatory process and a valuable tool for gauging the effectiveness of the permitting system, there is not a standard procedure for such monitoring, and only a few wetlands boards actually utilize a comprehensive compliance program.

This study, funded in part by the National Oceanic and Atmospheric Administration through a grant received under the Coastal Zone Management Act of 1972 as amended, was conducted to study permit compliance, develop a permit compliance and monitoring program for use by the Marine Resources Commission, and to make recommendations to the local wetlands boards, where appropriate, in an effort to help improve their permit compliance efforts.

COMPLIANCE SURVEY

The compliance survey was designed to investigate and gauge the effectiveness of the various compliance monitoring programs currently utilized by VMRC and local wetlands boards. The survey was intended both to identify existing compliance shortcomings and to ascertain effective compliance monitoring techniques in order to develop concise recommendations to enhance compliance monitoring programs.

Methods

One hundred and forty (140) projects were randomly selected from a pool of 778 applications submitted in 1989 for permits to use or develop tidal wetlands or to encroach in, on, or over State-owned submerged land. Applications for subaqueous permits outside of the Tidewater region were excluded from the selection pool, as were applications which did not require a permit from either the local wetlands board or VMRC. Also excluded were applications which only requested authorization for private boathouses. Although more recently issued permits could have been used, 1989 permits were selected because it was believed that the majority of these projects would likely have been constructed by the time of the survey.

The 140 selected applications were screened and those applications which were submitted after-the-fact, involved only subaqueous dredging, or had

not yet received a permit due to delays or denial were discarded. After screening, 120 projects remained in the sample group. Prior to conducting the survey we consulted with Mr. Lyle Varnell and other members of the Wetlands Department at the Virginia Institute of Marine Science and determined that a sample size equal to or greater than 120 should provide statistically significant results.

Table 1.
Number and jurisdictional type of project selected for the compliance survey in each locality.

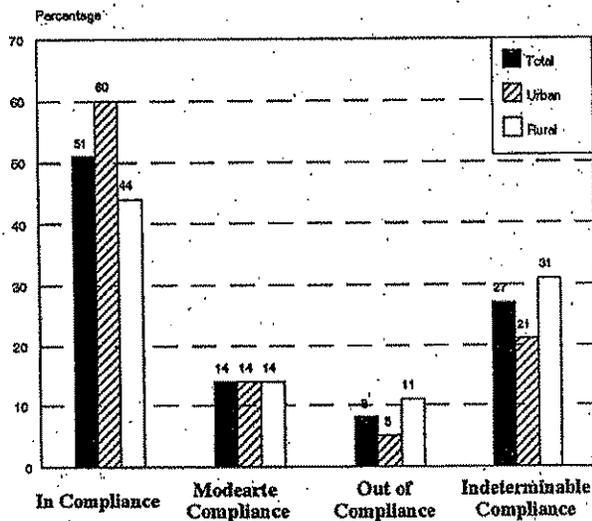
Locality	Rural/Urban	# of Projects	Type of Project
Accomack	Rural	15	3S, 7W, 5B
Chesapeake	Urban	4	4W
Essex	Rural	1	1B
Fairfax	Urban	1	1W
Gloucester	Rural	3	1S, 1W, 1B
Hampton	Urban	5	32, 2W
James City	Urban	3	3W
King George	Rural	1	1W
King and Queen	Rural	1	1W
King William	Rural	1	1B
Lancaster	Rural	9	1S, 5W, 3B
Mathews	Rural	3	3W
Middlesex	Rural	8	1S, 5W, 2B
Norfolk	Urban	8	1S, 6W, 1B
Northampton	Rural	1	1S
Northumberland	Rural	19	18W, 1B
Poquoson	Urban	1	1W
Prince William	Urban	1	1B
Stafford	Urban	3	2S, 1W
Suffolk	Rural	1	1W
Virginia Beach	Urban	20	14W, 6B
Westmoreland	Rural	7	4W, 3B
York	Urban	4	3W, 1B
Totals			
23 Localities	13 Rural	120 Projects	13 Subaqueous
	10 Urban	Reviewed	81 Wetlands
			26 Both

Permit activity per locality is highly variable. For example in 1989 there were no applications received in some localities while in others over 200 were reviewed. Since permit activity varies widely between localities and because the study hoped to draw conclusions on the

Table 2.
Compiled results of compliance survey conducted for projects permitted in Tidewater during 1989.

	Total	Urban	Rural
# of Projects Reviewed	120	50	70
% of Projects Reviewed	n/a	42%	58%
# of Projects Constructed	98	43	55
% of Projects Reviewed	82%	86%	79%
# in Compliance,	50	26	24
% of Constructed Projects	51%	60%	44%
# Moderate Compliance	14	6	8
% of Constructed Projects	14%	14%	14%
# Out of Compliance	8	2	6
% of Constructed Projects,	8%	5%	11%
# Compliance Indeterminable	26	9	17
% of Constructed Projects	27%	21%	31%

Figure 2.
Projects categorized by level of compliance.



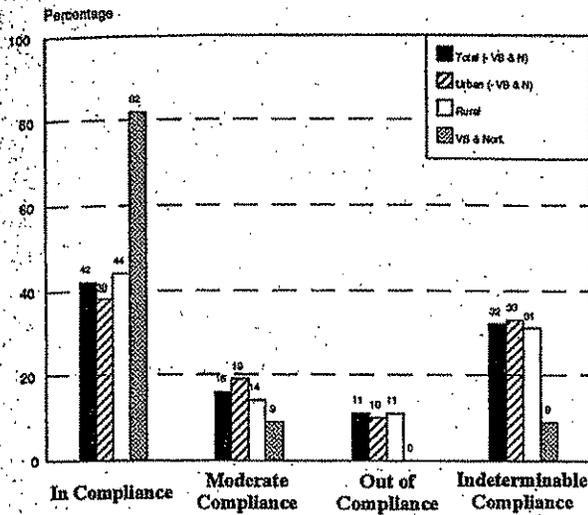
Due to the somewhat subjective nature of the data and the low number of samples in some of the sub-groups, no statistical tests for significance were attempted. Nevertheless, there appears to be a discernible difference between rural and urban localities in all the categories other than "Moderate Compliance." A clearer disparity exists, however, when the cities of Virginia Beach and Norfolk are factored independently and then compared to all other localities. This is presented in Table 3 and illustrated in Figure 3.

Table 3.
Compiled results of compliance survey conducted for projects permitted in Tidewater during 1989. Va. Beach and Norfolk factored independently.

	Total	Urban	Rural	Va. Beach & Norfolk
# Projects Reviewed	93	22	70	28
% Projects Reviewed	77%	18%	58%	23%
# Projects Constructed	76	21	55	22
% Projects Reviewed,	82%	95%	77%	79%
# in Compliance	32	8	24	18
% Constructed Projects	42%	38%	44%	82%
# Moderate Compliance,	12	4	8	2
% Constructed Projects	16%	19%	14%	9%
# Out of Compliance	8	2	6	0
% Constructed Projects	10%	10%	11%	0%
# Compliance Indeterminable	24	7	17	2
% Constructed Projects	32%	33%	31%	9%

Figure 3 clearly illustrates a disparity between the cities of Virginia Beach and Norfolk when compared to all other Tidewater localities. Eighty-two (82) percent of the completed projects reviewed in Virginia Beach and Norfolk were determined to be in compliance, whereas only 42% of all other projects reviewed were categorized as "In Compliance". Also noteworthy is how similar the percentages of the urban and rural localities become once Virginia Beach and Norfolk are factored out.

Figure 3.
Projects categorized by level of compliance. Va. Beach
and Norfolk factored independently.



Discussion

A cursory review of the survey results is at first very discouraging. Of all the constructed projects reviewed, only 51% were determined to be in compliance. It is important to note, however, that compliance could not be determined for one reason or another at 27% of the sites visited. The fact that compliance could not be determined does not automatically mean that the projects were not built in conformance with the intent of the permit document.

In fact, it is more encouraging to note that the vast majority of the sites visited even where compliance could not be determined, appeared to have been constructed along reasonable alignments and were often the proper length or width or both. This seems to indicate a general intent to comply with permit requirements. This opinion is further supported by the fact that, of all those projects where compliance could be determined, 89% were determined to be in either total or moderate compliance.

The primary problem identified during the survey was the inability to precisely determine compliance at 27% of the sites visited. Many of the permits did not have adequate drawings or benchmarks to ensure compliance. Additionally, many permits contained ambiguous conditions such as, "approximately" or "as close to the bank as possible", which are by their nature virtually unenforce-

able. Compliance determinations are made more difficult when the person inspecting the constructed project was not present during the initial site visit and is therefore unfamiliar with preconstruction conditions. Without the aid of precise benchmarks or other means to pinpoint the alignment of a project, compliance determinations are difficult at best and frequently impossible.

As expected, the projects in localities that require more detailed application drawings and information exhibited a higher percentage of determinable compliance. This is illustrated in Figure 3. Compliance could be determined at 91% of the sites inspected in Virginia Beach and Norfolk. Both of these localities require detailed permit drawings with identifiable benchmarks. Both also regularly conduct post-construction compliance inspections. Additionally, Virginia Beach requires professionally engineered project drawings and further requires the permittees to post performance bonds. Those bonds are not released until post-construction inspections have determined that projects are indeed in compliance with the permit granted by the Board.

Not only was compliance usually determinable at the Virginia Beach and Norfolk projects, but the level of compliance was generally higher as well. This is most likely attributed to the regular post-construction inspections. Ninety (90) percent of the projects where compliance could be determined in Virginia Beach and Norfolk were determined to be in compliance and 10% were in moderate compliance. None of the inspected sites were determined to be out of compliance. By comparison, 15% of the sites visited in other localities, were categorized as out of compliance, where compliance could be determined.

Prior to conducting the study, it was anticipated that there would be a marked difference in compliance levels between urban and rural localities. Initially this appeared to be the case. Once Virginia Beach and Norfolk were factored independently from the other urban localities, however, the data revealed very little difference in compliance levels between urban and rural localities.

It appears that the programs being implemented by Virginia Beach and Norfolk are effective in ensuring permit compliance. As a result, the recommendations for improving compliance draw heavily on the examples provided by these localities.

SUMMARY AND RECOMMENDATIONS

The increasing importance of effective compliance monitoring cannot be overstated. Recent legislative changes which authorize VMRC and wetland boards to issue restoration orders and assess civil charges for violations of wetlands, dunes, and subaqueous statutes necessitate compliance programs which can accurately

ascertain whether projects were conducted in conformance with the applicable permit documents. According to the 1988 report by the Year 2020 Panel entitled, "Population Growth and Development in the Chesapeake Bay Watershed to the year 2020", Tidewater will experience continued and rapid population growth over the next two decades. As a result, conflicts between the various competing user groups within the coastal region can only be expected to increase and the issues become more complex. Effective regulation and compliance monitoring will be essential if we are to accommodate and manage this growth while limiting adverse impacts to our finite coastal resources.

When developing compliance monitoring policies it will be important for the wetland boards and VMRC to strike an appropriate balance between an effective program and unnecessary bureaucratic red tape. If the policies and procedures are overly complex, time consuming, or expensive, public outcry and resistance is sure to occur. Therefore, the following recommendations are intended to provide the minimum mechanisms necessary to guarantee increased compliance without imposing undue or unrealistic hardships upon the applicant.

Recommendations to Wetlands Boards to Enhance Compliance Efforts

Wetlands board compliance monitoring efforts vary widely between localities. As a result, some of the following recommendations will not be applicable to all boards. In fact, many of the recommendations were developed from existing wetlands board policies which have proven to be effective. The majority of the recommendations are designed to assist boards in developing an acceptable compliance monitoring program if they don't currently have one. They may also provide suggestions for improvement in those boards with existing compliance procedures.

We acknowledge that numerous localities are already financially constrained and as such may not have the additional funds or personnel necessary to dedicate to an expansion of their wetlands programs. These recommendations were developed with that in mind. Most can be effectively implemented without additional manpower. In fact, once underway, an active compliance monitoring program could actually streamline project reviews and reduce the number of time consuming violations and after-the-fact permit requests that a board now considers.

1. Require detailed drawings for all projects requiring a wetlands permit. At a minimum, all of the information contained in the Joint Permit Application drawing checklist should be included in the drawings. Some boards have taken this a step further and require professionally engineered drawings on all projects, while others require such P. E. stamped drawings only on commercial projects or large projects that surpass a certain threshold of impact. These requirements should be clearly established as wetland board policies. An application should not be considered complete until all the required information has been received.

2. Special attention should be given to requiring accurate benchmarks and reference points. Accurate distances from fixed reference points or benchmarks to each end and/or angle of the structure or impacted area should be required. A sample plan view drawing containing representative benchmarks is provided in Attachment 1. These distances should be carefully confirmed during the initial site visit since they will ultimately become the final indicators of permit compliance. If benchmarks prove impractical for a particular project, then a condition requiring that the alignment be staked and inspected prior to permit issuance should be imposed as conditions of approval. Some boards also require that the alignment of a bulkhead be inspected and approved after installation, but prior to backfilling, to reduce the environmental impacts and costs of restoration in the event it has been improperly constructed.

3. Take an adequate number of photographs or slides during the initial site visit to clearly document pre-construction site conditions. In addition to providing valuable reference material for public hearings, photographic documentation provides clear comparative evidence when determining permit compliance. If video equipment is available, it may prove to be another helpful tool. VCR tapes may even be less expensive and easier to archive in the long run. Photographic documentation is especially valuable if the project will require the grading of the adjacent upland.

4. Conduct routine post-construction inspections. Although this may involve additional man-hours, it is the only mechanism available to ensure permit compliance. If the required permit drawings and benchmarks are clear and accurate, the compliance checks can usually be conducted quickly, even by individuals unfamiliar with the project. Some localities might wish to utilize their existing local building or code compliance inspectors to check wetland board permit compliance during their other regular duties. If a post-construction inspection policy is adopted by the board, the inspectors should utilize a compliance inspection worksheet similar

to the one developed by VMRC. This form may be found as Attachment 2. The worksheet will help to ensure that all the necessary information is gathered during the inspection and will provide a quick reference in the event questions regarding the project arise later. Additionally, the worksheet information should be provided to VMRC for incorporation into the compliance data base. The data base will provide a valuable source of information on compliance and the overall effectiveness of individual wetlands boards.

5. Utilize only enforceable permit conditions and avoid nebulous statements such as "approximately" and "as close to the bank as possible." Instead, the board should negotiate a specific maximum encroachment, length, or amount of impacts should modifications become necessary to satisfy any concerns. If modifications or revisions are agreed to during the public hearing, revised drawings which accurately reflect the modification, including revised benchmark distances, should be required prior to permit issuance.

6. Develop a wetland board placard to be posted by the permittee at all permitted project sites during construction. The placard can serve to aid inspectors and concerned citizens when a project is under construction and problems or questions arise. The placard would provide the name and permit number, making identification and inspection of the project easier. If the locality already requires building permits for all wetland projects, they may wish to avoid duplication and just add the wetland permit number to the placard for easy identification. A sample placard that was developed for VMRC is provided as Attachment 3.

7. Performance bonds can be utilized to provide a financial incentive to comply with wetlands permits. Some boards currently require all permittees to post a performance bond. That bond is not released until a post-construction inspection has determined that the project was constructed in conformance with the permit document. Some boards may determine that bonds are not appropriate for all projects due to low permit activity or the fact that additional man-hours are required to process the bonds.

Bonds are a compliance mechanism that are already provided for in the wetlands law. They are routinely used effectively by a few boards to ensure compliance. The bonds are typically set high enough to provide sufficient funds to undertake restoration in the event of noncompliance. Bonds also

provide an additional mechanism for ascertaining when the permitted construction has been completed, since the permittee will typically call for a compliance inspection soon thereafter in order to have his bond released. Whether or not the board develops a performance bond policy for all projects, performance bonds should be considered as a valuable tool to ensure compliance on projects of special concern.

Recommendations VMRC Should Consider to Enhance Compliance Efforts

Virginia state agencies are also currently operating within strict fiscal constraints. In addition, all agencies continue to explore ways to streamline the permitting process. As a result, it is especially important that any new compliance enhancement policies not result in additional burdens on VMRC's financial resources nor result in unnecessary additional requirements imposed on the applicant. The following recommendations are made with this in mind and are typically policy and procedural type changes rather than an imposition of new requirements on the applicant. Many of the recommendations for VMRC are similar to those noted for wetlands boards.

1. Require detailed drawings for all projects requiring a VMRC permit. Staff engineers should utilize the drawings checklist found in the Joint Permit Application in their initial review of each application to determine completeness. Areas where insufficient data was provided should be conveyed to the applicant with the acknowledgement letter. Incomplete applications should not be processed. If adherence to this policy fails to provide the anticipated results, the Commission may wish to consider adopting a regulation that requires professionally engineered drawings be submitted on all commercial projects, or for projects exceeding a certain threshold of impact or value. In the event an engineer can clearly determine from the available information that a VMRC permit will not be required, additional information to satisfy this policy would not be necessary.

2. Accurate benchmarks or reference points should be required on the plan view drawing(s) of all projects requiring VMRC authorization. Accurate distances from the benchmark to each end, and angle of the structure or impacted area should be mandatory. These distances should be routinely checked during the initial site visit. If benchmarks are impractical for a certain project, it may be necessary to have the applicant stake the impacted area. If staking is utilized, the engineer should take an adequate number of slides to accurately document the proposed alignment. This may well be the case for dredging proposals.

3. Engineers should take an adequate number of slides during the initial site visit to clearly illustrate pre-construction site conditions. Photographs provide a valuable source of information when reviewing constructed projects for compliance. They are especially valuable when a great deal of time has elapsed since the initial site visit and in those cases where the engineer who originally reviewed the project is no longer available to assist.

Although slides have been used almost exclusively in the past for photographic documentation, it may be useful to utilize video tape for certain types of projects. If video taping is used more frequently, it may be necessary to develop a method to archive the tapes for easy access and retrieval.

4. Engineers should conduct post-construction inspections at all sites permitted by VMRC. The post-construction inspection form found in Attachment 2 should be utilized to ensure that all necessary information is gathered during the visit.

The Commission should consider expanding their existing Memorandum of Agreement with the Department of Game and Inland Fisheries to include the use of VDGIF personnel to conduct the post-construction inspections in the western portion of the State.

Dredging projects should be evaluated by boat. Soundings should be taken to ascertain compliance. Dredging inspections should be conducted as soon after completion as practical to minimize the likelihood that additional impacts from non-dredging related factors could obscure or cloud the dredged dimensions of the area. If available, a chart recorder or a precise recording fathometer would be especially valuable to document the inspection.

In order to receive notification of the completion of permitted activities, VMRC should consider re-instituting the former postcard notification procedure. Should the permittees fail to regularly return the postcards upon completion, which was often the case in the past, the Commission might have to resort to bonding or some other form of deposit. This bond would not be released until after a post-construction inspection had confirmed permit compliance. It might be necessary to seek legislative authorization if the Commission is to require bonds for permits issued under Section 62.1-3.

5. Data collected from the post-construction inspections should be incorporated into the Habitat Management Division's existing computer tracking system. This would provide an easy

method to identify projects which have yet to be inspected, as well as, provide the next logical step in permit tracking. Used in conjunction with the existing project description tracking data, the new data would allow examination of compliance by such attributes as, project type, locality, contractor and agent involved. It would also provide important data on the number of projects which actually get completed. This information would provide an additional valuable tool for monitoring compliance and identifying potential shortcomings in the regulatory program.

VMRC should strongly encourage local wetlands boards to conduct routine post-construction inspections utilizing the compliance worksheet and provide the results of the inspections to VMRC for incorporation into the compliance tracking data base. Projects in localities which opt not to conduct routine post-construction inspections should be inspected by VMRC personnel, if necessary, to obtain the compliance data.

Literature Cited

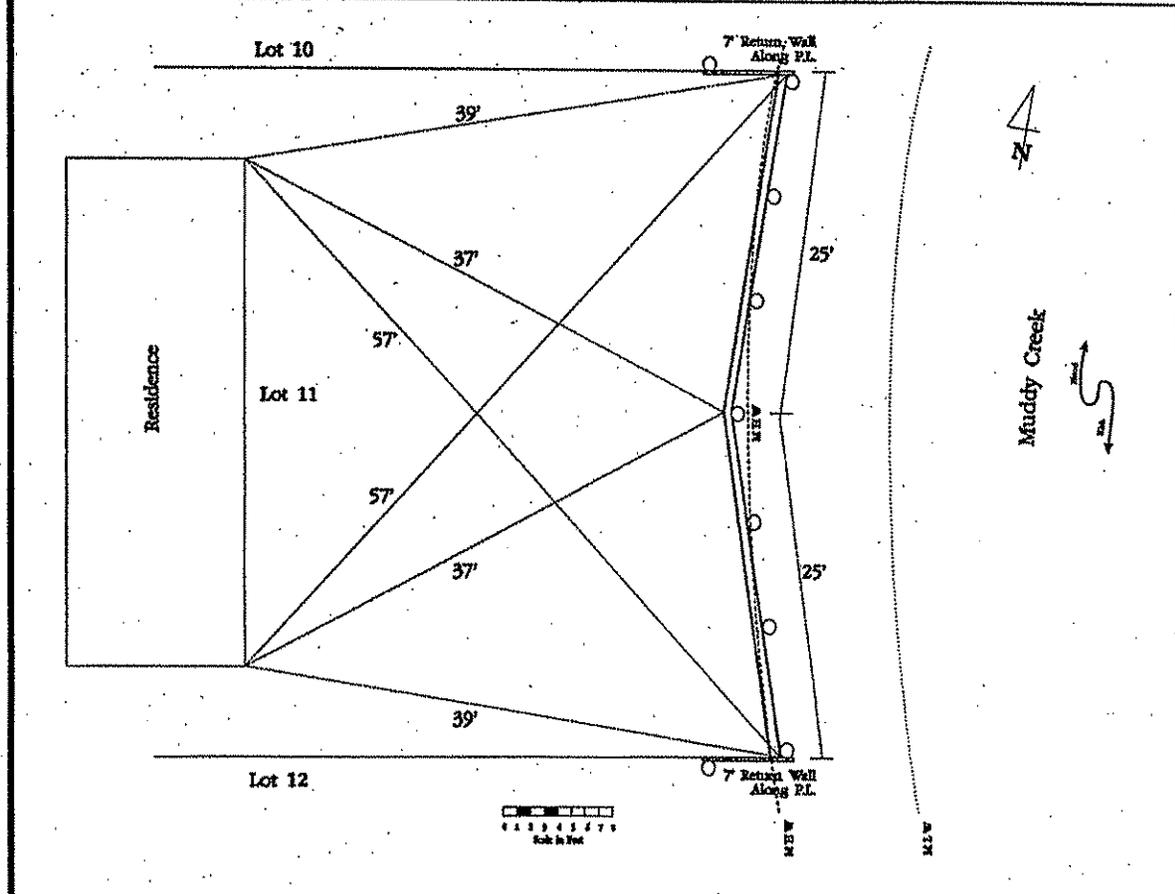
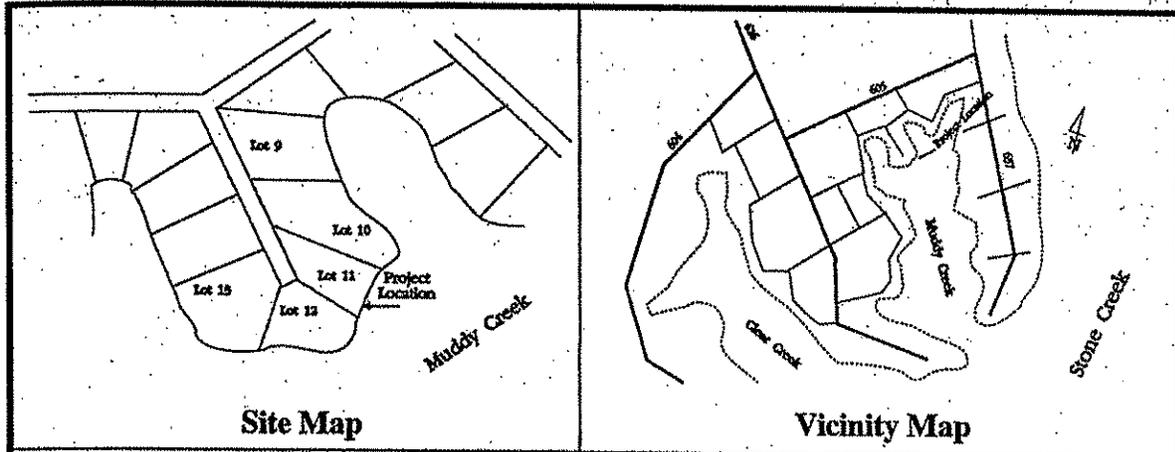
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Attachment 1



<p>Datum: MLW</p> <p>Adjacent Property Owners</p> <ol style="list-style-type: none"> 1. Lot 10, C.B. Parks 2. Lot 12, M.E. Lank 	<p>Plan View</p> <p>John G. Doe P.O. Box 123 Tidewater, Va 22222</p>	<p>County of: Northumberland</p> <p>Sheet 1 of 1 Date: August 3, 1991</p>
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Attachment 2

PROJECT COMPLIANCE
ASSESSMENT

VMRC # _____
ENGINEER _____
SITE VISIT _____
DATE/TIME _____
OTHERS PRESENT _____

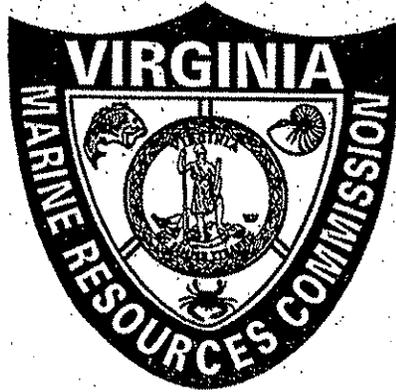
1. Permittee _____
2. Location (Waterway) _____
(City/County) _____
3. Project Description _____
4. Project Completed? Yes _____ No _____
5. Date of Permit Expiration (VMRC) _____
(LWB) _____
6. Project Dimensions as Permitted _____

7. Project Dimensions as Constructed _____

8. Can Permit Compliance be Determined? _____ If no, explain.

9. Degree of Compliance: In Compliance Moderate Out of Compliance
10. Additional Comments _____

Attachment 3



Permit # _____

Commonwealth of Virginia
Marine Resources Commission
Authorization

A Permit has been issued to:

(Name)

(Address)

The Permit Authorizes : _____

Issuance Date _____,

Expiration Date _____.

(Commissioner or Designee)

(Notary Public)

(Commission Expires)

This Notice Must Be Conspicuously Displayed At Site Of Work