

ANNUAL REPORT FOR 2000



Manteo Bypass Bridge Mitigation Site
Dare County
Project No. 8.T051403
TIP No. R-2551 A



Prepared By:
Natural Systems Unit & Roadside Environmental Unit
North Carolina Department of Transportation
December 2000

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SUMMARY

The following report summarizes the monitoring activities that have occurred in the past year at the Manteo Bypass Bridge Restoration Site. The site was restored in August and September 1999. Monitoring activities for 2000 include the first year of vegetation monitoring for the site.

The mitigation encompasses approximately 0.128 acres total. The site consists of brackish marsh restoration. The restoration effort involves removing spoil deposited by the jetting of piles and monitoring the spoil removal area to ensure that natural regeneration of *Juncus roemerianus*. No hydrologic monitoring is required for this project; however, vegetation monitoring is required for five years.

In conclusion, NCDOT recommends that the site be planted in Spring, 2001, in an effort to "jump-start" the vegetation throughout the site.

1.0 INTRODUCTION: MANTEO BYPASS BRIDGE MITIGATION SITE

1.1 Project Description

The Manteo Bypass Bridge Restoration Site is located immediately adjacent to the western terminus of the new bridge over the Croatan Sound associated with the Manteo Bypass (TIP R-2551A). The site consists of approximately 0.128 acres and provides for the following types of mitigation:

Brackish Marsh Restoration

1.2 Purpose

The purpose of this report is to detail the vegetation monitoring in 2000 at the Manteo Bypass Bridge Restoration Site. No hydrologic monitoring is required for this particular site. Vegetation

1.3 Project History

October 2000 | Vegetation Monitoring (1 yr.)



Figure 1: Manteo Bypass Bridge Mitigation Site

2.0 VEGETATION: MANTEO BYPASS BRIDGE (YEAR 1 OF 5)

2.1 Success Criteria

The success criteria set forth by the permit violation is outlined in Appendix A. However, it is the request of the Department to revise the success criteria for this site to the current marsh mitigation criteria that has evolved in coordination with the US Army Corps of Engineers and the National Marine Fisheries Service. The new success criteria is reflected in the following description

The vegetative marsh success of the wetland site will be determined in accordance with NMFS Guidelines. Monitoring plots found to be located within the open water channel will not be evaluated, and will not count to the final count of plots. The vegetation component of the wetland site will be deemed successful if the following criteria are met.

1. At year five, the average of all plots should have a scale value of 5 (75% vegetative cover) consisting of wetland herbaceous species, not including any invasive species.
2. A minimum of 70% of the plots shall contain the target (planted) specie.

Due to the bridge interference with the GPS system, we are unable to GPS to computer generated random plots; therefore, visual monitoring will be utilized for the monitoring of this 0.128 acre site. Success Criteria will remain 75% vegetative cover of wetland herbaceous species, not including any invasive species in the fifth year and 70% of the site shall contain the target (planted) species.

2.2 Description of Species

Juncus roemerianus, Black Needle Rush, is the primary target marsh grass specie that is to be present in the Wetland Restoration Area.

2.3 Results of Vegetation Monitoring (1 Year)

Site (ON SITE)	Juncus Roemrianus	% Coverage
Manteo	5 %	5 %

2.4 Conclusions

- Percent Frequency of Target Specie (Black Needle Rush) - 5%Frequency of 70% required.
- Vegetative Cover Percentage 5%
- Vegetative Cover Percentage of 70% required for year 5. This marsh grass site is approximately 0.128 acres.

3.0 OVERALL CONCLUSIONS/RECOMENDATIONS

Based on the vegetation data provided in this report, the Department proposes plant Black Needle Rush throughout the restoration area in Spring, 2001. This activity will be completed, in conjunction with the marsh grass planting at the Mashoes Road Mitigation Site, which is also in Dare County.

APPENDIX A

ORIGINAL MONITORING PLAN SUBMITTED TO USACE



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT JR.
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

DAVID MCCOY
SECRETARY

August 11, 1999

U. S. Army Corps of Engineers
Washington Regulatory Field Office
P. O. Box 1000
Washington, NC, 27889-1000

ATTENTION: Michael F. Bell, PWS
Regulatory Project Manager

SUBJECT: Monitoring plan for the disturbed area adjacent to the new bridge
over the Croatan Sound associated with TIP Project R-2551.

Dear Sir:

Please find attached the proposed monitoring plan for the recovery of the disturbed black
needle rush marsh adjacent to the new bridge over the Croatan Sound. If you have any
questions please don't hesitate to call me at (252) 482-7977.

Sincerely,

Lindsey Riddick
Division Environmental Officer-Division One

CC: D. R. Conner, P. E.
Randy Midgett, P. E.
Randy K. Wise, P. E.
Frank Jennings, DCM

Monitoring Plan for the recovery of the disturbed marsh area adjacent to the new Croatan Sound Bridge

The plan consists of monitoring the disturbed site to determine the success of vegetative recovery occurring within it. The existing undisturbed marsh, dominated by black needle rush (*Juncus roemerianus*), adjacent to the disturbed site will be evaluated in September, 1999, and will be used as a reference marsh to determine the degree of recovery. Three plots measuring 1 meter by 1 meter will be selected randomly and the percent aerial vegetative coverage will be evaluated and used as a baseline reference.

The disturbed area will be allowed to recover naturally from existing plant material and seed source present. Vegetative monitoring will be conducted annually beginning in September of 1999. The monitoring will consist of randomly selecting 12 plots in the disturbed area, measuring 1 meter by 1 meter, and comparing the level of regeneration to the reference marsh. The area will be evaluated after one full growing season in September of 2000 to determine if replanting with black needle rush will be necessary. If replanting is deemed necessary, NCDOT will prepare a planting plan and submit it to the USACE and the NCDOT for approval. All efforts will be made to utilize a local seed source if plantings are required. If there are any areas where compaction has prevented natural regeneration from occurring, hand labor will be used to scarify the area to remediate the compaction. Areas that require scarification will be planted with black needle rush and monitored accordingly.

As required, there will be a zero tolerance for phragmites (*Phragmites communis*). If the presence of this species is detected, measures will be taken immediately to eradicate this species from the site.

Monitoring reports will be submitted by December 31st of each year for a period of five years. The disturbed area will be considered recovered when aerial vegetative coverage has been determined to meet or exceed 90% of the coverage found in the reference marsh. If after a period of three years, it is determined that recovery efforts are not succeeding, the North Carolina Department of Transportation will consult with the U. S. Army Corps of Engineers and the North Carolina Division of Coastal Management to discuss necessary remedial action.

APPENDIX B

SITE PHOTOS & PHOTO LOCATION MAP

Manteo Bypass Bridge



Photo 1



Photo 2



Photo 3



Photo 4



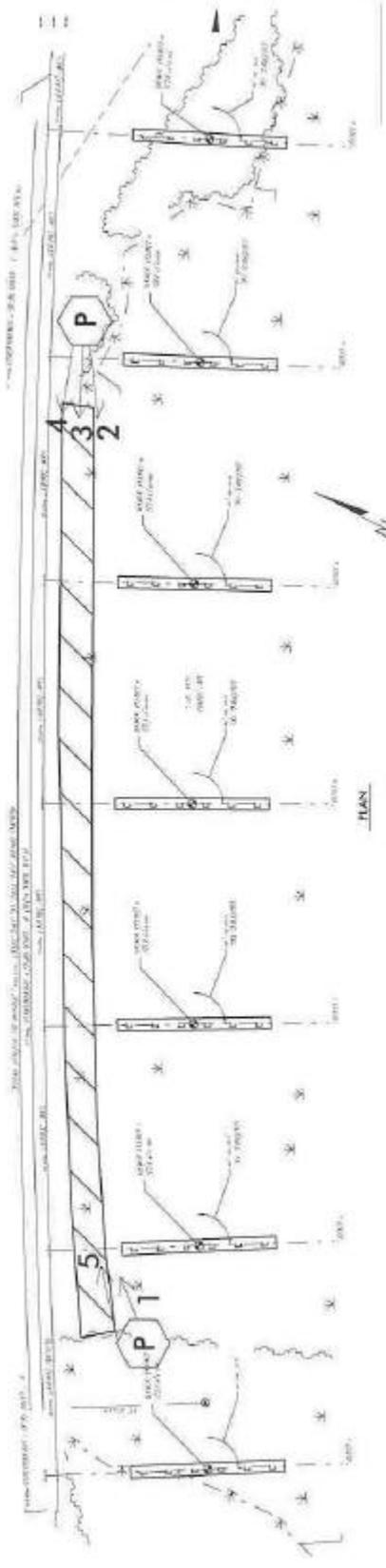
Photo 5

WM-1

MANTEO BYPASS BRIDGE MARSH IMPACTS

PHOTO LOCATIONS

2000 MONITORING



 MARSH IMPACTS (0.13 ACRES)

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

NO.	DATE	BY	STATUS
1			
2			
3			
4			
5			