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Accomack County Dune Inventory

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Accomack County Dune Inventory

Virginia Institute of Marine Science
College of William & Mary
Gloucester Point, Virginia

August 2004

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Cover Photo
South of Saxis Island, Accomack County, Virginia, 13 Dec 2000 by VIMS, Shoreline Studies Program.

1 INTRODUCTION

1.1 Purpose

Accomack County is located on the Eastern Shore of Virginia (Figure 1). Only dune sites on Chesapeake Bay were analyzed. A total of 33 dune sites were identified along Accomack’s shoreline (Figure 2). It is the intent of this publication to provide the user with information on the status of dunes in Accomack County. This information comes from research performed in 1999 and 2000 which was presented in a report entitled “Chesapeake Bay Dune Systems: Evolution and Status (Hardaway *et al.*, 2001). Although somewhat dated, the information provides a short historical perspective of the state of each site at the time of the site visit. Since much of the data was collected several years ago and the beach and dune systems may have changed, this report is intended only as a resource for coastal zone managers and homeowners; it is not intended for use in determining legal jurisdictional limits.

1.2 Dune Act

Coastal dune systems of the Commonwealth of Virginia are a unique and valuable natural resource. Dunes are important to both the littoral marine system (as habitat for flora and fauna) and the adjacent landward environment (as erosion control and protection from storms). These functions form the basis for the Coastal Primary Sand Dune Protection Act of 1980 (Act)¹ and the related resource management effort under which the primary dune and beach components of existing dune systems are protected. Secondary dunes are not protected under the Act; however, as they are an important part of the overall dune system, they were included in the original report (Hardway *et al.*, 2001) and analyzed as part of a risk assessment performed by Varnell and Hardaway (2002). In this inventory, both primary and secondary dunes are included.

Primary dunes must meet three criteria in order to fall under the Act’s jurisdiction:

- 1. **Substance:** a mound of unconsolidated sandy soil contiguous to mean high water
- 2. **Morphology:** landward and lateral limits are marked by a change in grade from >10% to <10%.
- 3. **Character:** primary dunes must support specific plant species or communities which are named in the Act and include: American beach grass (*Ammophila breviligulata*); beach heather (*Hudsonia tometosa*); dune bean (*Strophostylis* spp.); dusty miller (*Artemisia stelleriana*); saltmeadow hay (*Spartina patens*); seabeach sandwort (*Arenaria peploides*); sea oats (*Uniola paniculata*); sea rocket (*Cakile edentula*); seaside goldenrod (*Solidago sempervirens*); and short dune grass (*Panicum amarum*).

¹The General Assembly enacted the Coastal Primary Sand Dune Protection Act (the Dune Act) in 1980. The Dune Act was originally codified in Code § 62.1-13.21 to -13.28. The Dune Act is now recodified as Coastal Primary Sand Dunes and Beaches in Code § 28.2-1400 to -1420.

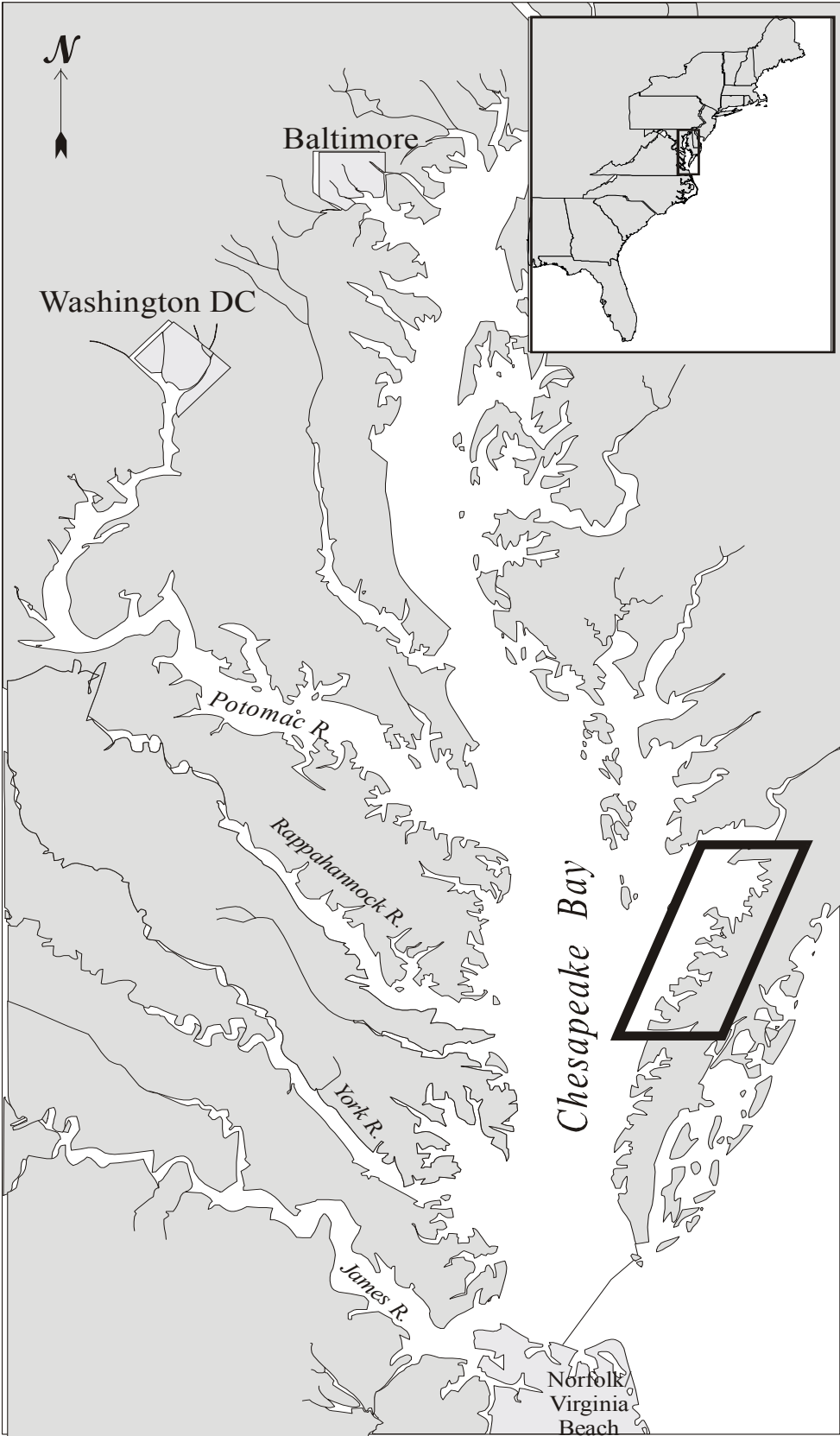


Figure 1. Location of Accomack County within the Chesapeake Bay estuarine system.

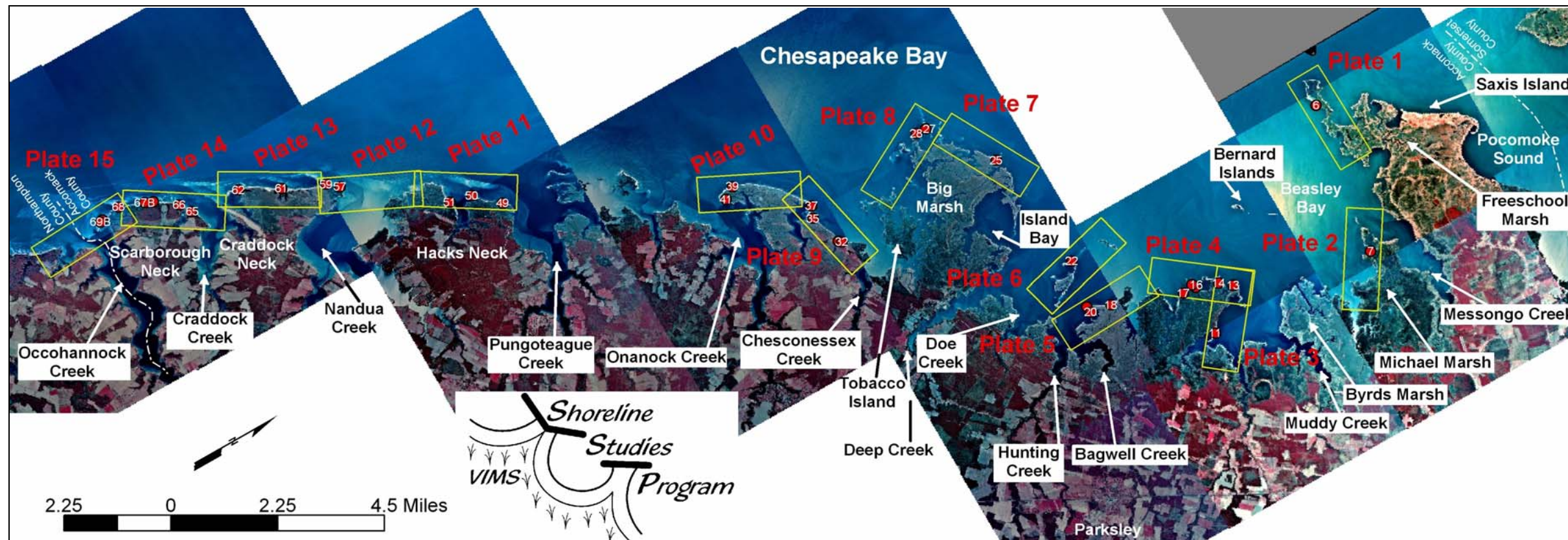


Figure 2. Geographic extent of dunes in Accomack County.

2 BACKGROUND

Coastal primary sand dunes form by the accumulation of sand due to the interaction of wind and wave action along the shore. Sand deposited on the beach during periods of relatively low wave energy is moved landward by onshore winds. The deposition of material above the intertidal zone allows vegetation to take root along the wrack line which then acts as a baffle, slowing wind speed and causing wind-borne sand to settle and be trapped in the vegetation, thereby resulting in further accretion of the dune. Therefore, the size and location of a primary dune is determined by the amount of sand available and the ability of wind and waves to move it as well as the degree to which any existing vegetation can act to trap it. Just as the intensity, direction, and duration of winds and waves constantly change through the seasons, so too, do coastal dunes. They exist in a state of flux.

Dunes act as a reservoir of sand which can buffer inland areas from the effects of storm waves and, in the process, act as natural levees against coastal flooding. During high energy conditions, such as the northeast storms which frequent the Eastern Seaboard, primary dunes may be subject to attack by wind-driven waves aided by storm surges. The dune may be eroded, and the sand deposited in an offshore bar. Then, under low-energy conditions, the sand may move back to the beach.

Natural dunes in the Chesapeake Bay estuarine system vary in size and nature, but all require an accreted feature, such as a beach washover or a spit to become vegetated above the intertidal zone. Vegetation and a continuous beach/dune profile are required to create the jurisdictional primary dune. If the dune/beach forms across a low marsh shoreline, the system will move landward in response to storms, and only a low primary dune will exist. If sand can accrete bayward due to shoals, spits, or man-made features such as jetties and groins, then a secondary dune may develop from the original primary dune.

Hardaway *et al.* (2001) found that the occurrence of dunes around Chesapeake Bay is due, in part, to three factors: 1) morphologic opportunity (*i.e.*, relatively stable setting), 2) abundant sand supply in the littoral transport system, and 3) conducive onshore wind/wave climate. Deposited sand must remain above a stable backshore to allow dune vegetation to become established. Each dune documented by Hardaway *et al.* (2001) has its own history of change -- growth and decay; natural and anthropogenic. Many miles of natural dunes have been altered by development, and many have been formed in response to processes altered by man's influence. Dunes around the Chesapeake Bay estuarine system in the localities within the Act encompass only about 40 miles of shoreline (Hardaway *et al.*, 2001). This is about 0.4% of the total Bay shore - making it an important, but rare, shore type.

All dunes in the Chesapeake Bay estuarine system are mobile features especially with regards to coastal zone management. Unlike ocean dune fields that are relatively continuous features exposed to the open ocean, the dunes of the Chesapeake form across a temporal and spatial geomorphic matrix driven by sand volume, varying wave climate, and shoreline geology. The coastal geology, in large part, determines whether shoreline erosion acts upon the upland (high bank) or marsh (low bank). Sand supply and the long-term local wave climate are significant factors in the location of dunes. The stability or ability of a dune/beach system to accrete over time is necessary for the formation of secondary dunes.

2.1 Dune System Classification

The Chesapeake Bay dune classification was developed in Hardaway *et al.* (2001) and is portrayed in Figure 3. This classification is based on factors that are unique to certain dune systems and has a basis in the dune field evolution, vegetative zones, lateral and vertical extent of primary and secondary dune features, and anthropogenic impacts.

Dunes are categorized as Natural (1), Man Influenced (2), or Man Made (3). These three types reflect how the state of the dune is most impacted. The parameters (A through G) are most influential in defining the status of a given dune system. Parameter values within each category assign a range of limits or characteristics. Categories A, B, and C relate to the nature of the impinging wave climate at a given site while categories D, E, and F relate to geologic parameters. Dune parameter G relates to the type of anthropogenic influence.

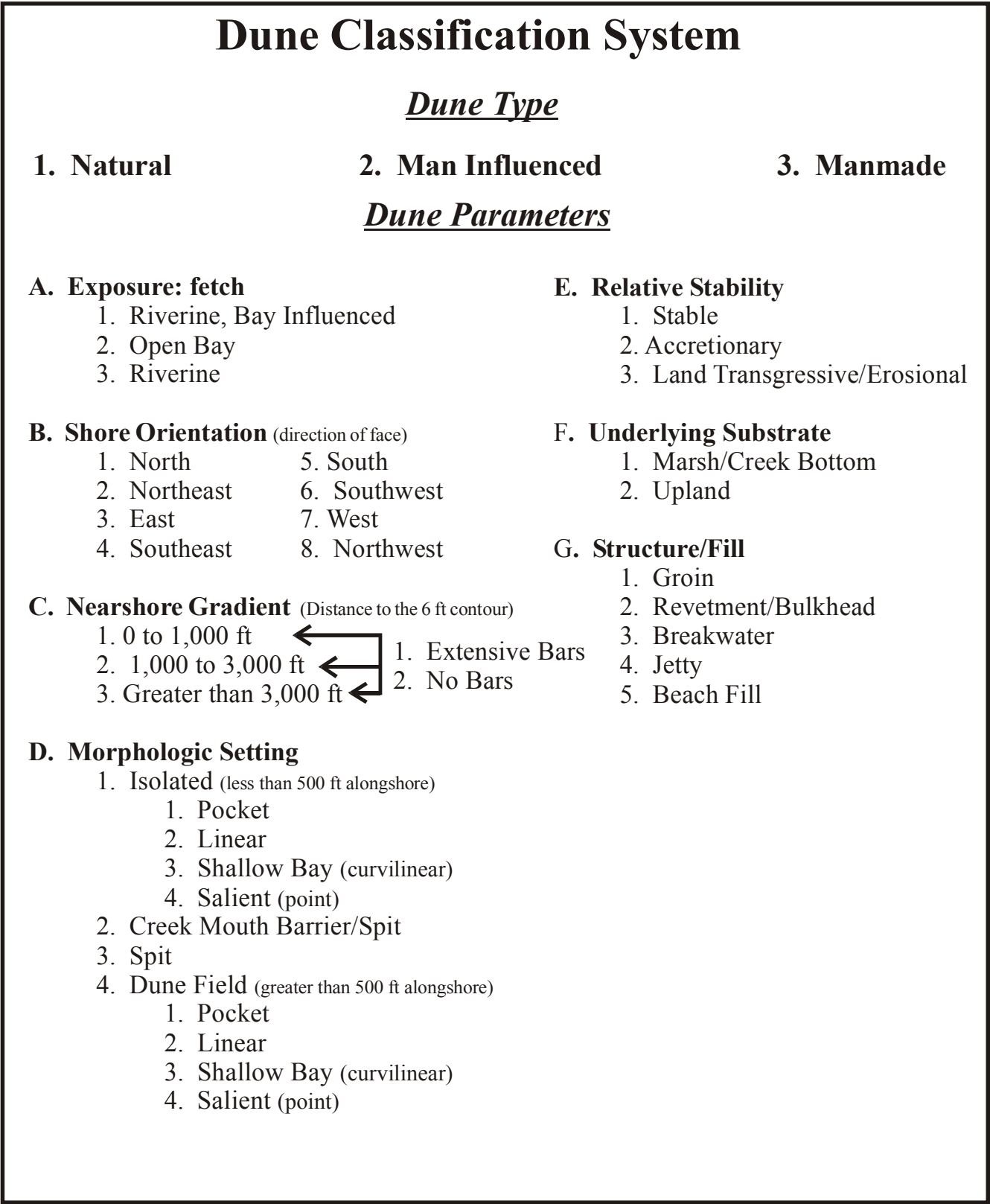
Fetch Exposure (A) is a qualitative assessment of the wave exposure and wave climate across open water. Wave impact is the dominant natural process driving shoreline erosion and sediment transport along the Bay coasts. Riverine, Bay Influenced (A.1) is somewhere between the Open Bay exposure (A.2) and Riverine Exposure (A.3). Generally, A.1 sites have fetches of 5-10 nautical miles (nm); A.2 have fetches of >10 nm; and A.3 have fetches <5 nm.

Shore Orientation (B) is the direction the main dune shore faces according to eight points on the compass. Shoreline exposure to dominant directions of wind and waves is a component of fetch exposure (A) and wave climate as well as aeolian processes that assist in dune growth and decay.

Nearshore Gradient (C) controls wave refraction and shoaling that, in turn, affect the nature of wave approach and longshore sand transport as well as onshore/offshore transport. The presence or absence of bars indicates the relative amount of nearshore sediment available for transport.

The Morphologic Setting (D) is significant in the genesis of a particular dune site. Aerial imagery from VIMS SAV Archive and field observations were used to determine and classify the Morphologic Setting. Four basic categories were developed including: 1) Isolated dunes, 2) Creek mouth barrier dune/spit, 3) Spit and 4) Dune fields. Morphological Settings 1 and 4 are distinguished only by shore length (*i.e.* Morphologic Setting 1 < 500 ft and Morphologic Setting 4 > 500 ft) as an arbitrary boundary. These categories were subdivided to reflect the nature of the setting into four subcategories which are 1) Pocket, 2) Linear, 3) Shallow Bay and 4) Salient.

The Relative Stability (E) of a dune is very subjective. It is meant as a value judgement as to the overall current and future integrity at the time of the site visit. If the site had wave cut scarps along the primary dune face and/or was actively moving landward (overwash), it was termed Land Transgressive/Erosional (E.3). If the backshore/dune face had a slight gradient with stabilizing vegetation, it was stable (E.2) or, possibly, accretionary (E.1).



The underlying substrate (F) is a general category for the type of substrate or sediment the dune resides on and against. Two broad categories were chosen - marsh and upland. The marsh category includes creek bottoms which should be a separate category because beach/dune development can occur across the mouth of a creek bottom without a true marsh. The distinction between upland and marsh was that the marsh substrate is usually a low bank subject to washover processes, whereas the upland area offered a “backstop” to land beach/dune migration.

If the site was not Natural (1), then the nature of man’s impact was determined by the type of modification. The shore structures include Groins (G.1), Bulkheads and Revetments (G.2), Breakwaters (G.3), Jetties (G.4), and Beach Fill (G.5). The degree of impact any given structure or combination of structures had on the dune site was not always clear. The Relative Stability (E) relates in part to whether man’s influence was erosive (destructive) or accretionary/stable (constructive).

2.2 Site Characteristics

Coastal zone profile and vegetation types present on dunes were determined by site visit. Beach profile transects were performed at most sites to measure the primary and secondary dune (where present) within 100 feet of the shoreline. Standard surveying and biological procedures were utilized. Not all dune sites were surveyed.

Each surveyed transect used the crest of the primary dune as the horizontal control and mean low water (MLW) as the vertical control. The primary dune crest was determined on site. The MLW line was indirectly obtained from water level measurements. The observed water level position and elevation were checked against recorded tidal elevations at the nearest NOAA tide station and time of day to establish MLW on the profile.

The typical dune profile has several components (Figure 4). A continuous sand sheet exists from the offshore landward and consists of a 1) nearshore region, bayward of MLW, 2) an intertidal beach, berm, and backshore region between MLW and base of primary dune, 3) a primary dune from bayside to landside including the crest, and, where present, 4) a secondary dune. All profiles extended bayward beyond MLW and landward to at least the back of the primary dune. The secondary dune crest was always

measured, but the back or landward extent of the secondary dune could not always be reached. The dimensions, including lateral position and elevation of various profile components were measured. These include: primary dune crest elevation, distance from primary dune crest to back of dune, distance from primary dune crest to MLW, secondary dune crest elevation, secondary dune crest to primary dune crest, and secondary dune crest to back of secondary dune.

During each site visit, dominant plant communities occupying the primary and secondary dunes (if present) were analyzed (Figure 4). Plant species distribution is based on observed percent cover in the general area of profiling and sampling within the identified dune reach.

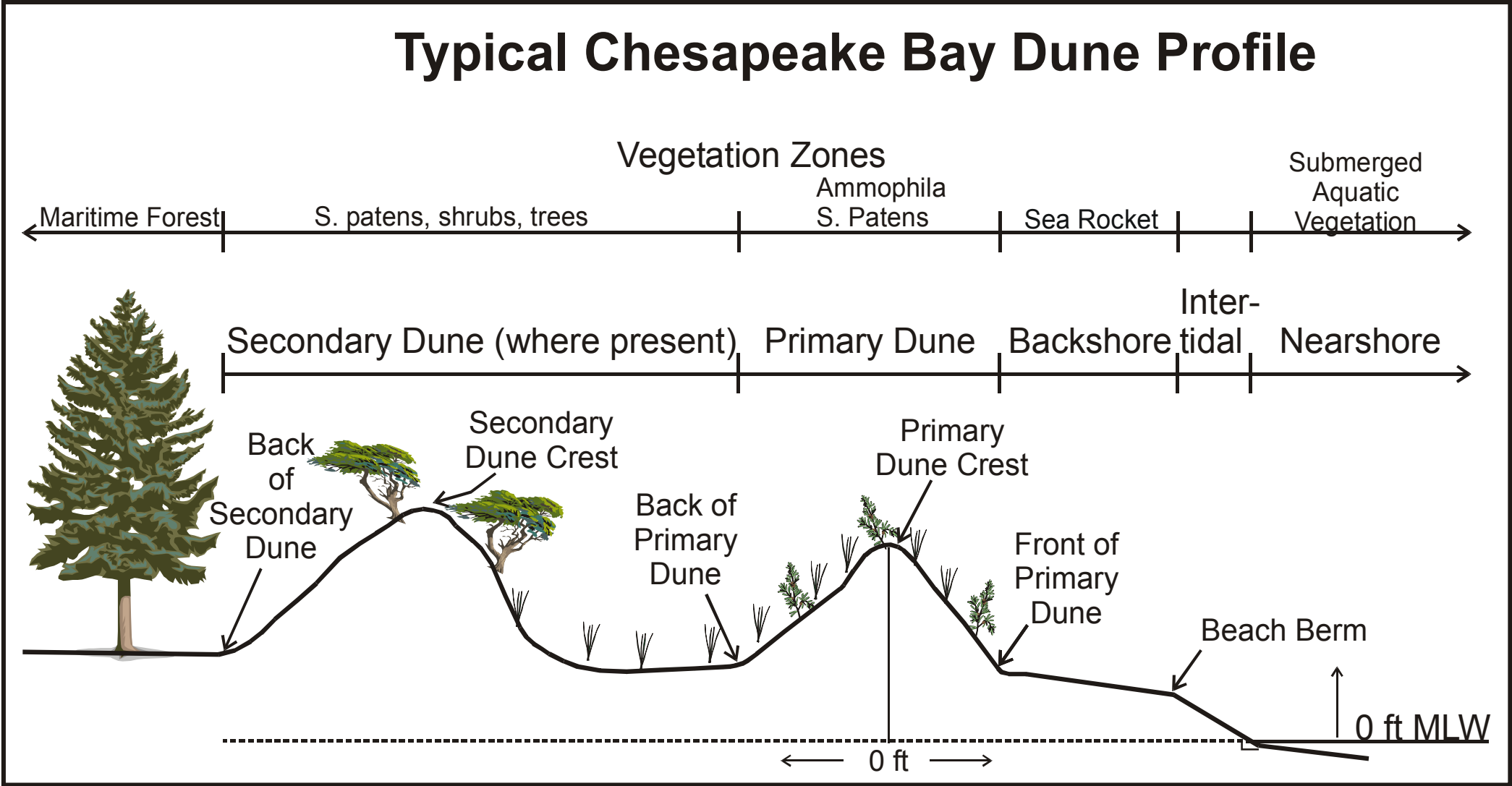


Figure 4. Typical profile of a Chesapeake Bay dune system (from Hardaway *et al.*, 2001).

3 DUNE DATA SUMMARY

Approximately 5 miles of dune shore have been identified along Accomack’s Bay shore. Previous work by Hardaway *et al.* (2001) indicated a total of 72 possible dune sites in Accomack, but site visits verified 33. Of those 33 sites, 2 had more than one profile taken to quantify the different morphology of the site bringing the number of sites to 35. The dunes cover a wide variety of fetch exposures and site conditions. Dune lengths vary from a hundred feet to a thousand feet. Dunes reside in areas of sand accretion and stability such as around tidal creek mouths, embayed shorelines, in front of older dune features, as washovers, as spits and against man-made structures like channel jetties or groin fields. Most site visits occurred in 1999 and 2000. However, due to inaccessibility, some sites were not visited until 2004. Site characteristics may now be different due to natural or man-induced shoreline change.

In Accomack County, only 8 of the 35 sites have both primary and secondary dunes. The average length of primary dune only sites is 630 ft while the average length of the primary with secondary dunes is 1,115 feet. Clearly, the wider sites with secondary dunes are also the longest. The 3 main categories of Natural, Man-Influenced and Man-Made were initially utilized to portray a sites most influential element. In Accomack County, all of the dune sites are natural.

Table 1. Identified dune sites in Accomack County as of 2000. Site characteristics may now be different due to natural or man-induced shoreline change.

Dune Site No.	Location^		Date Visited	Dune Shore Length (feet)	Primary Dune Site?	Secondary Dune Site?	Ownership*
	Easting (Feet)	Northing (Feet)					
6	2,793,740	581,260	29-Sep-2000	910	Yes	No	Private
7	2,811,210	578,850	29-Sep-2000	180	Yes	No	Private
11	2,811,330	559,310	27-May-2004	450	Yes	No	Private
13	2,807,460	563,590	27-May-2004	550	Yes	No	Private
14	2,806,480	562,260	27-May-2004	450	Yes	No	Private
15	2,805,720	559,750	27-May-2004	300	Yes	No	Private
16	2,805,270	559,530	28-Sep-2000	450	Yes	No	Private
17	2,805,640	558,250	28-Sep-2000	950	Yes	No	Private
18	2,803,050	550,510	28-Sep-2000	1,100	Yes	No	Private
19	2,801,980	548,010	27-May-2004	200	Yes	No	Private
20	2,802,730	548,140	27-May-2004	500	Yes	No	Private
22	2,796,650	548,950	28-Sep-2000	590	Yes	No	Private
25	2,782,630	546,880	27-May-2004	280	Yes	No	Private
27	2,775,780	541,610	28-Sep-2000	970	Yes	Yes	Private
28	2,775,760	540,460	28-Sep-2000	850	Yes	No	Private
32	2,782,770	527,360	27-May-2004	250	Yes	No	Private
33	2,782,540	527,030	27-May-2004	150	Yes	No	Private
35	2,778,910	525,780	27-May-2004	400	Yes	No	Private
37	2,777,580	526,300	27-May-2004	180	Yes	No	Private
39	2,771,540	519,540	28-Sep-2000	210	Yes	No	Private
41	2,772,510	518,220	28-Sep-2000	1,380	Yes	Yes	Private
49	2,761,230	496,050	19-Oct-1999	380	Yes	No	Private
50	2,758,890	493,420	19-Oct-1999	680	Yes	No	Private
51	2,758,400	490,920	19-Oct-1999	2,850	Yes	No	Private
57	2,751,120	480,940	19-Oct-1999	270	Yes	No	Private
59	2,750,180	479,700	19-Oct-1999	270	Yes	No	Private
61	2,748,260	475,100	19-Oct-1999	3,780	Yes	Yes	Private
62	2,746,170	470,760	19-Oct-1999	1,100	Yes	Yes	Private
65	2,745,890	465,020	28-Sep-1999	640	Yes	Yes	Private
66	2,744,590	464,150	28-Sep-1999	400	Yes	Yes	Private
67A	2,742,920	461,790	28-Sep-1999	1,650	Yes	No	Private
67B	2,742,560	460,870	28-Sep-1999	1,450	Yes	No	Private
68	2,741,650	458,110	28-Sep-1999	630	Yes	No	Private
69A	2,742,100	455,770	28-Sep-1999	400	Yes	Yes	Private
69B	2,742,220	455,510	28-Sep-1999	250	Yes	Yes	Private

*Public ownership includes governmental entities including local, state, and federal; otherwise ownership is by the private individual.

^Location is in Virginia State Plane South, NAD 1927.

Table 2. Dune site measurements in Accomack County as of 2000. Site characteristics may now be different due to natural or man-induced shoreline change.

Dune Site Measurements									
Site No.	Dune Shore Length (feet)	Primary Dune			Secondary Dunes				
		Crest Elev (ftMLW)	Distance from Crest		2nd Dune Site	Crest Elev (ftMLW)	Distance From		
			landward to back base (feet)	To MLW (feet)			Primary Crest to 2nd Crest (feet)	2ndCrest landward (feet)	2nd Crest seaward to 1st back base (feet)
6	910	5.7	48	68	N				
7	180	5.9	37	63	N				
11	450								
13	550								
14	450								
15	300								
16	450	5.9	47	93	N				
17	950	5.6	39	70	N				
18	1,100	6.6	17	51	N				
19	200								
20	500								
22	590	5.9	66	65	N				
25	280	4.7	66	55					
27	970	6.6	37	64	Y	5.7	188	130	21
28	850	6.0	62	34	N				
32	250	6.0	30	47					
33	150	4.7	66	55					
35	400	5.5	23	41					
37	180	4.0	13	25					
39	210	4.7	43	39	N				
41	1,380	5.8	24	53	Y	4.8	154	44	86
49	380	5.4	40	59	N				
50	680	6.0	62	85	N				
51	2,850	6.0	103	72	N				
57	270	4.7	53	118	N				
59	270	6.5	40	65	N				
61	3,780	9.6	88	86	Y	6.2	280	130	62
62	1,100	7.8	36	68	Y	7.9	250	190	24
65	640	7.0	77	72	Y	3.6	145	39	29
66	400	5.2	28	44	Y	5.9	70	15	27
67A	1,650	8.3	38	75	N				
67B	1,450	7.0	69	67	N				
68	630	7.5	58	57	N				
69A	400	6.0	24	53	Y	7.4	63	25	14
69B	250	7.8	7	43	Y	8.8	54	39	8

Table 3. Dune site parameters in Accomack County as of 2000. Site characteristics may now be different due to natural or man-induced shoreline change.

Site No.	Type	Dune Site Parameters								
		Fetch Exposure	Shoreline Direction of Face	Nearshore Gradient		Morphologic Setting		Relative Stability	Underlying Substrate	Structure or Fill
		A	B	C		D		E	F	G
6	Natural	Open Bay	South	Meduim	no bars	Dune Field	Linear	Stable	Marsh	
7	Natural	Riv, Bay Inf	Southwest	Shallow	no bars	Isolated	Shallow Bay	Stable	Marsh	
11	Natural	Riv, Bay Inf	Northeast	Shallow	no bars	Isolated	Shallow Bay	Stable	Marsh	
13	Natural	Riv, Bay Inf	Southwest	Shallow	no bars	Isolated	Shallow Bay	Stable	Marsh	
14	Natural	Riv, Bay Inf	West	Shallow	no bars	Isolated	Shallow Bay	Stable	Marsh	
15	Natural	Riv, Bay Inf	Northwest	Shallow	no bars	Isolated	Shallow Bay	Stable	Marsh	
16	Natural	Open Bay	Northwest	Shallow	bars	Isolated	Linear	Accretionary	Marsh	
17	Natural	Open Bay	West	Shallow	bars	Dune Field	Shallow Bay	Stable	Upland	
18	Natural	Riv, Bay Inf	West	Meduim	bars	Dune Field	Linear	Stable	Marsh	
19	Natural	Riv, Bay Inf	South	Meduim	no bars	Isolated	Linear	Stable	Marsh	
20	Natural	Open Bay	South	Shallow	no bars	Dune Field	Linear	Eroisonal	Marsh	
22	Natural	Open Bay	Northwest	Shallow	no bars	Dune Field	Linear	Eroisonal	Marsh	
25	Natural	Open Bay	Northeast	Shallow	no bars	Isolated	Shallow Bay	Eroisonal	Marsh	
27	Natural	Open Bay	Northwest	Shallow	bars	Dune Field	Linear	Eroisonal	Marsh	
28	Natural	Open Bay	Southwest	Shallow	bars	Dune Field	Linear	Eroisonal	Marsh	
32	Natural	Open Bay	Northwest	Meduim	bars	Isolated	Linear	Eroisonal	Marsh	
33	Natural	Open Bay	Northwest	Meduim	bars	Isolated	Linear	Eroisonal	Marsh	
35	Natural	Open Bay	Northwest	Shallow	no bars	Isolated	Linear	Eroisonal	Marsh	
37	Natural	Open Bay	Northeast	Meduim	no bars	Spit	Linear	Eroisonal	Marsh	
39	Natural	Open Bay	West	Shallow	bars	Isolated	Pocket	Eroisonal	Marsh	
41	Natural	Riv, Bay Inf	Southeast	Steep	no bars	Dune Field	Shallow Bay	Accretionary	Marsh	
49	Natural	Open Bay	Northwest	Meduim	bars	Isolated	Linear	Eroisonal	Marsh	
50	Natural	Open Bay	Northwest	Meduim	bars	Dune Field	Linear	Eroisonal	Marsh	
51	Natural	Riv, Bay Inf	North	Shallow	bars	Dune Field	Linear	Stable	Marsh	
57	Natural	Open Bay	North	Meduim	bars	Isolated	Linear	Eroisonal	Marsh	
59	Natural	Open Bay	Northwest	Meduim	bars	Isolated	Linear	Eroisonal	Marsh	
61	Natural	Open Bay	Northwest	Meduim	bars	Dune Field	Linear	Stable	Marsh	
62	Natural	Open Bay	Northwest	Meduim	bars	Dune Field	Linear	Accretionary	Marsh	
65	Natural	Open Bay	Northwest	Shallow	bars	Ck Mouth Barrier/Spit		Eroisonal	Marsh	
66	Natural	Open Bay	Northwest	Meduim	bars	Ck Mouth Barrier/Spit		Eroisonal	Marsh	
67A	Natural	Open Bay	West	Meduim	bars	Dune Field	Linear	Eroisonal	Marsh	
67B	Natural	Open Bay	West	Meduim	bars	Dune Field	Linear	Eroisonal	Upland	
68	Natural	Open Bay	West	Meduim	bars	Dune Field	Linear	Eroisonal	Marsh	
69A	Natural	Open Bay	West	Shallow	bars	Ck Mouth Barrier/Spit		Eroisonal	Marsh	
69B	Natural	Open Bay	West	Shallow	bars	Isolated	Shallow Bay	Eroisonal	Marsh	

4 INVENTORY

Each dune site is located on plates in Appendix A. The individual site inventory sheets are in Appendix B. Due to the mobile nature of dunes, their extent and morphology changes through time. The data presented in this report represents the status of the site at the time of assessment and to the best of the author’s knowledge. This information is for general management purposes and should not be used for delineation. For detailed delineation of any dune site, the reader should contact the local wetlands board or Virginia Marine Resources Commission. See [Figures 3](#) and [4](#) for description of the site parameters and measurements listed below.

Each dune site has the following information on its inventory page:

- 1. Date visited
- 2. Central site coordinates in Virginia South State Plane Grid NAD 1927
- 3. Coordinates of profile origin
- 4. Site length in feet
- 5. Ownership
- 6. Site Type
- 7. Fetch Exposure
- 8. Shoreline Direction of Face
- 9. Nearshore gradient
- 10. Morphologic Setting
- 11. Relative Stability
- 12. Underlying Substrate
- 13. Type of structure or fill (man-influenced only)
- 14. Primary Dune Crest Elevation in feet above Mean Low Water (MLW)
- 15. Landward extent of Primary Dune from Dune Crest in feet
- 16. Distance from Dune Crest to MLW
- 17. Secondary Dune Crest Elevation in feet above MLW (if present)
- 18. Distance between Secondary Dune Crest and Primary Dune Crest
- 19. Landward extent of Secondary Dune from Secondary Dune Crest
- 20. Primary Dune vegetation communities
- 21. Secondary Dune vegetation communities
- 22. General Remarks

Also included on the dune site inventory page is the site cross-section, if surveyed, and ground photos, if taken. Long sites may have been represented with two or more profiles because the general morphology differs alongshore (Sites AC67 and AC69). Each profile was intended to be representative of that dune portion of the site. Several dune sites are listed in the Tables as dunes, but they were not surveyed and/or photographed. These sites are very isolated, hard to approach, and mostly natural features.

5 REFERENCES

Hardaway, C.S., Jr., G.R. Thomas, J.B. Glover, J.B. Smithson, M.R. Berman, and A.K. Kenne, 1992. Bank Erosion Study. Special Report in Applied Marine Science and Ocean Engineering Number 319. Virginia Institute of Marine Science, College of William & Mary, Gloucester Point, Virginia.

Hardaway, C.S., Jr., L.M. Varnell, D.A. Milligan, G.R. Thomas, C.H. Hobbs, III, 2001. Chesapeake Bay Dune Systems: Evolution and Status. Technical Report. Virginia Institute of Marine Science, College of William & Mary, Gloucester Point, Virginia.

Varnell, L.M. and C.S. Hardaway, 2002. An Analysis of Shoreline Development Risk for Secondary Dune Systems in Tidewater Virginia With Associated Management Recommendations. Final report to the Virginia Coastal Program. Virginia Institute of Marine Science, College of William & Mary, Gloucester Point, Virginia.

Acknowledgments

The authors would like to thank Travis Comer for his critical review and editing of the report as well as the personnel in VIMS’ Publications Center, particularly Susan Stein, Ruth Hershner, and Sylvia Motley, for their work in printing and compiling the final report.

Appendix A
Location of Dune Sites

Plates 1 & 2	Plates 9 & 10
Plates 3 & 4	Plates 11 & 12
Plates 5 & 6	Plates 13 & 14
Plates 7 & 8	Plates 15



Accomack County



● Dune Site

Photo Base 1994
Digital Orthophoto
Quarter Quadrangles

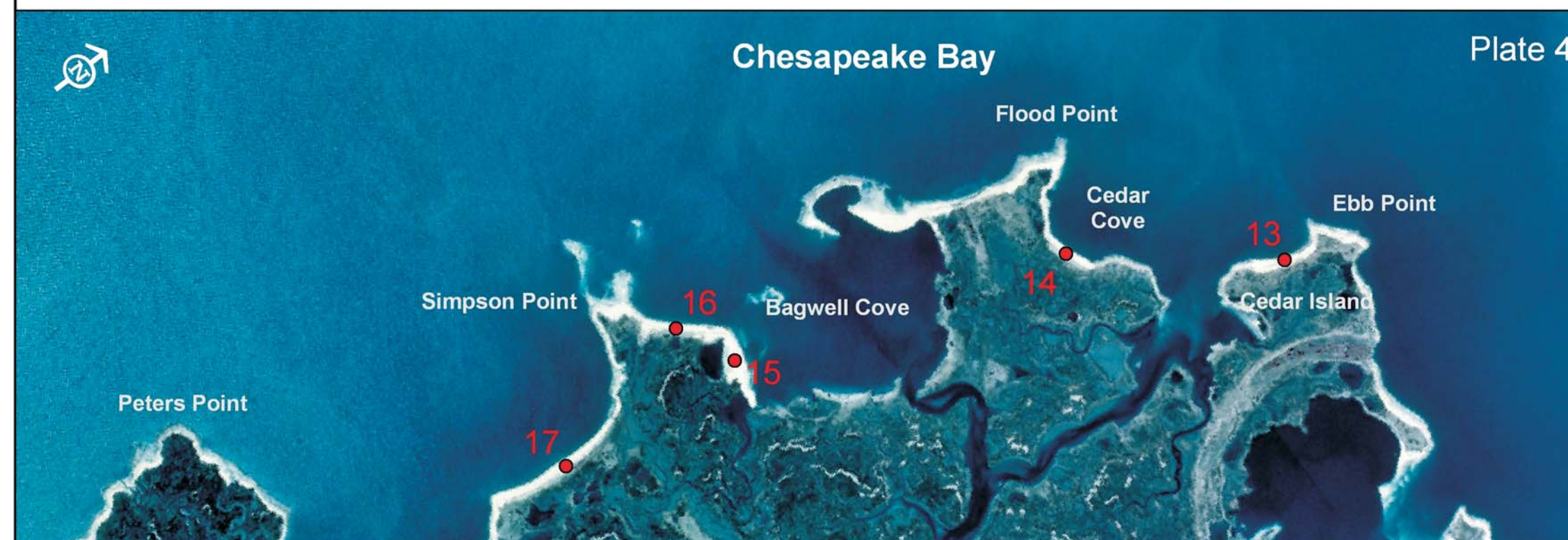
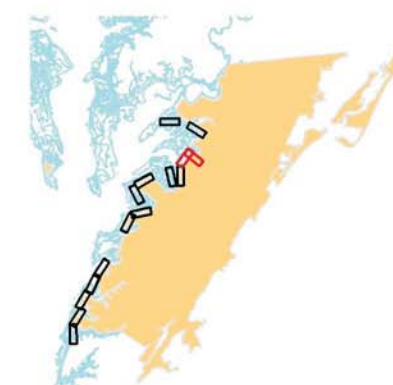


1,000 0 1,000 Feet





Accomack County

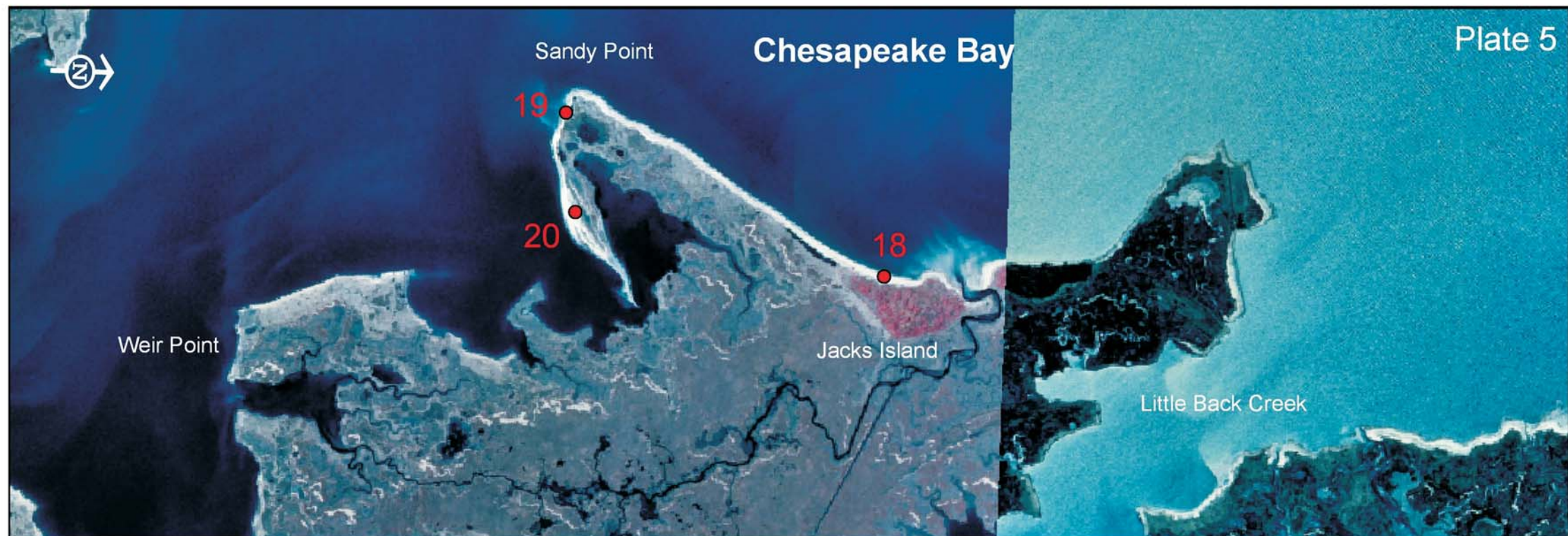


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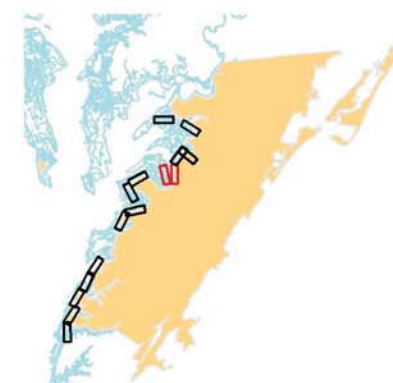
Photo Base 1994
Digital Orthophoto
Quarter Quadrangles



1,000 0 1,000 Feet



Accomack County



● Dune Site

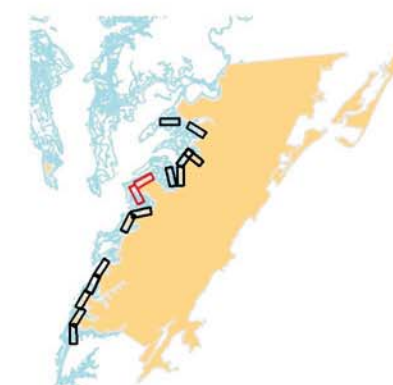
Photo Base 1994
Digital Orthophoto
Quarter Quadrangles



1,000 0 1,000 Feet



Accomack County



● Dune Site

Photo Base 1994
Digital Orthophoto
Quarter Quadrangles



1,000 0 1,000 Feet





Accomack County

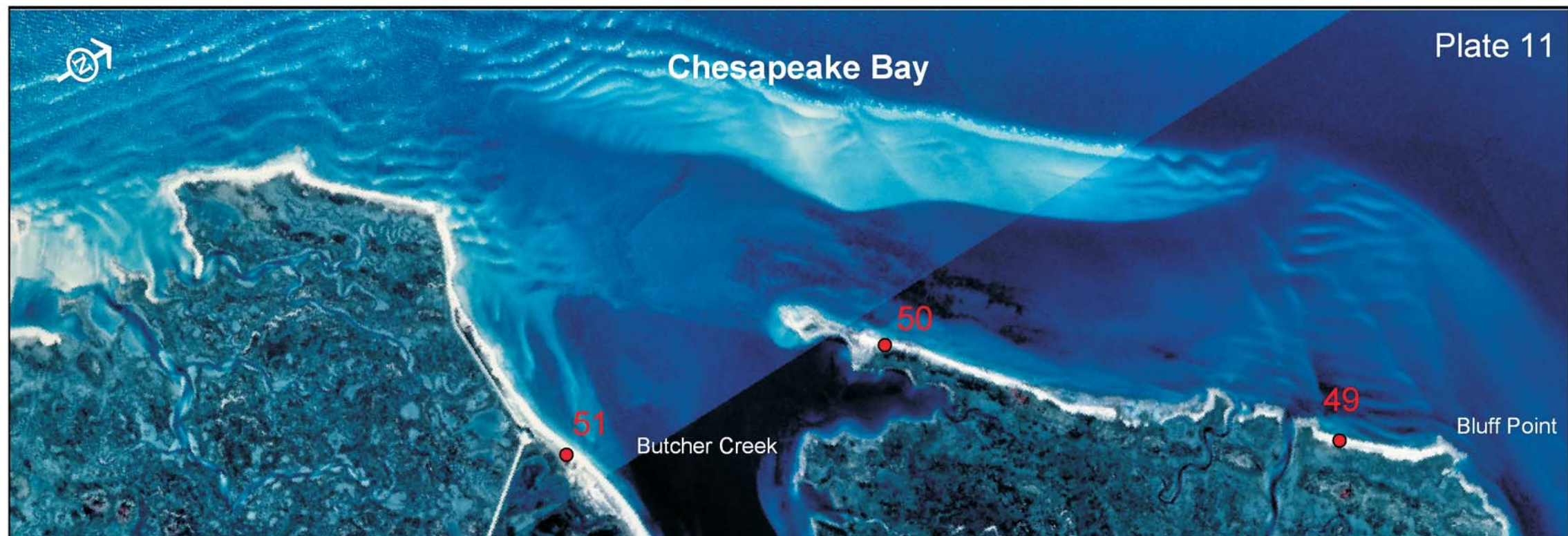


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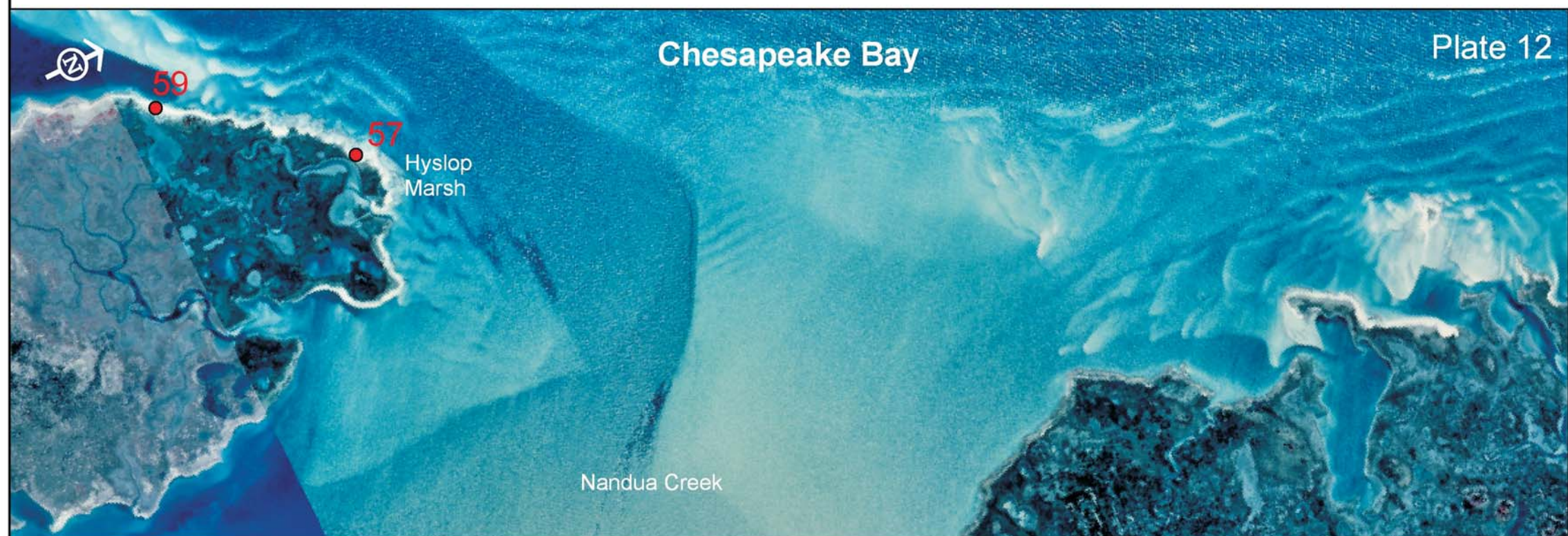
Photo Base 1994
Digital Orthophoto
Quarter Quadrangles



1,000 0 1,000 Feet



Accomack County

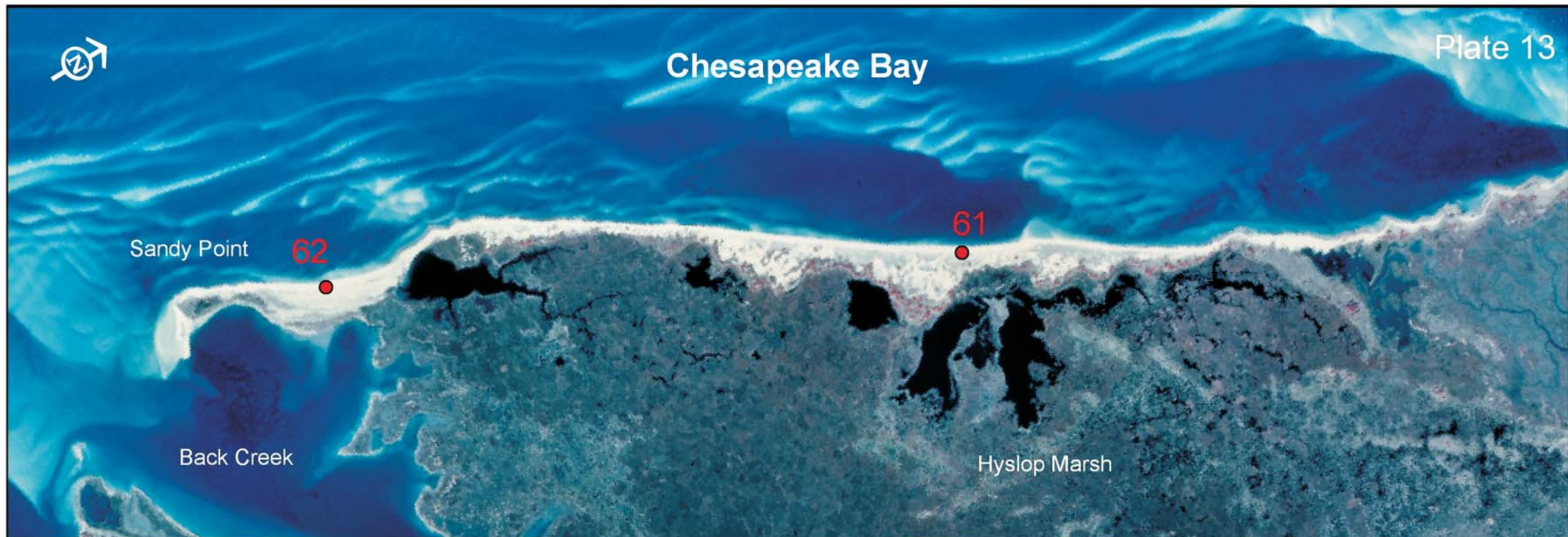


● Dune Site

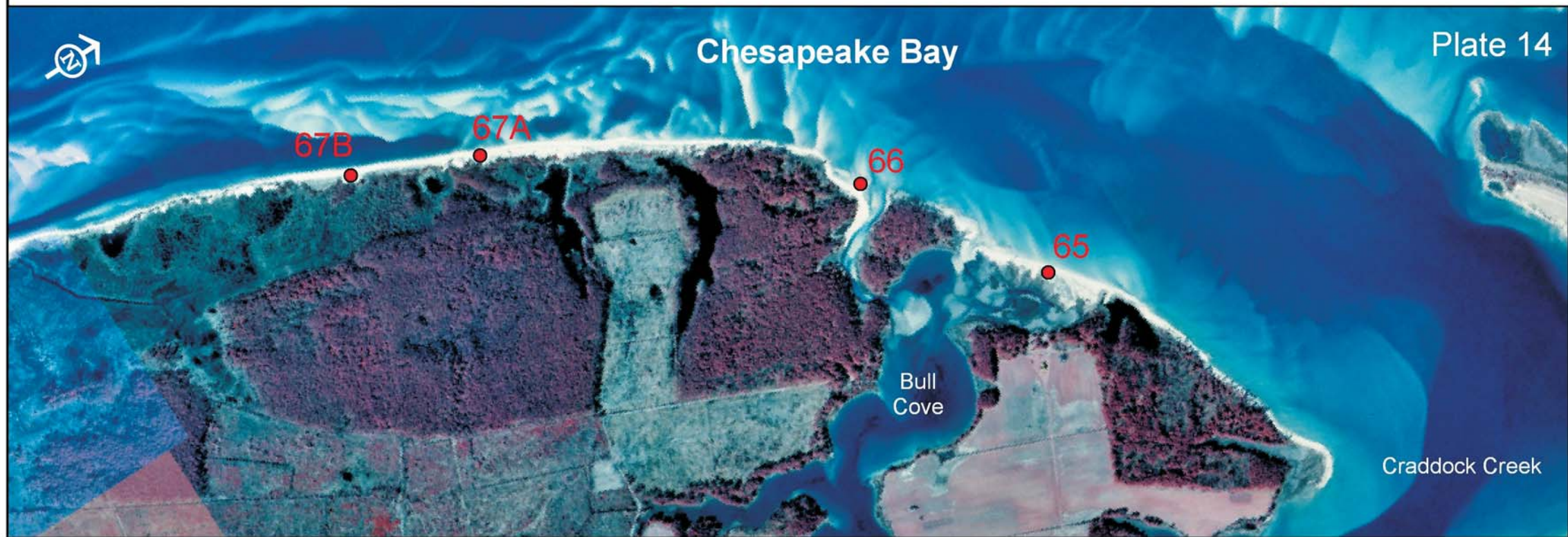
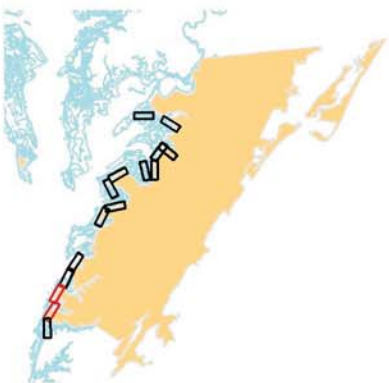
Photo Base 1994
Digital Orthophoto
Quarter Quadrangles



1,000 0 1,000 Feet



Accomack County

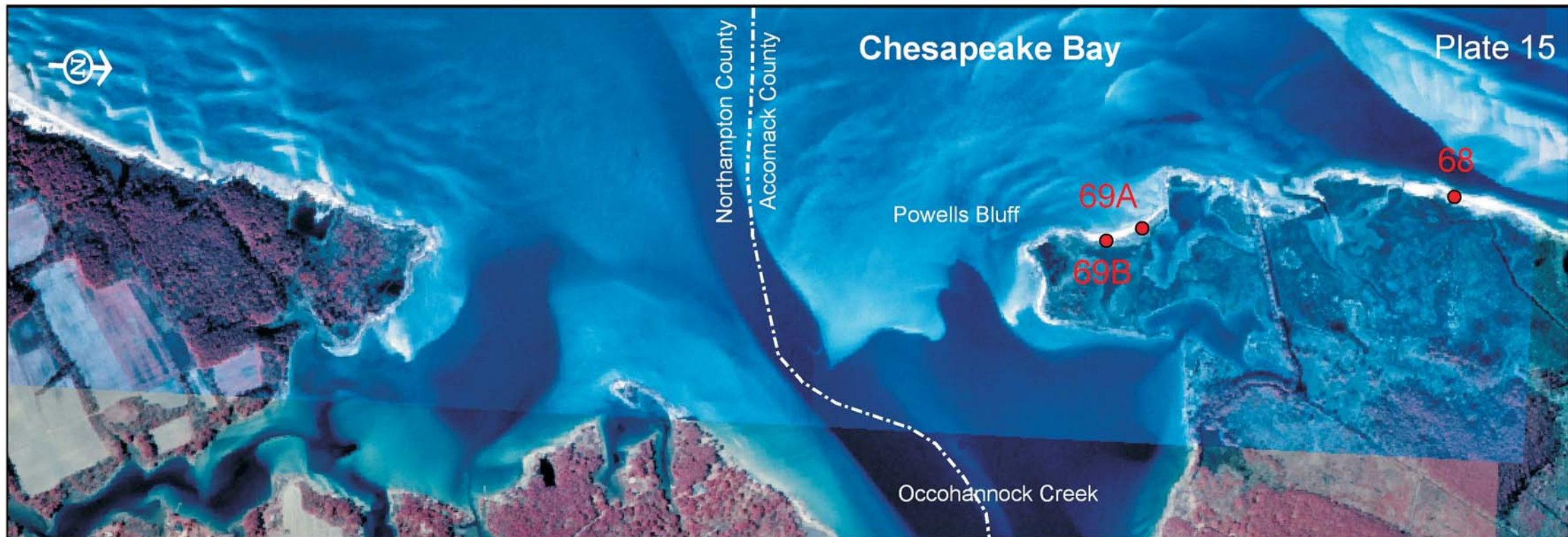


● Dune Site

Photo Base 1994
Digital Orthophoto
Quarter Quadrangles



1,000 0 1,000 Feet

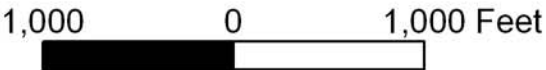


Accomack County



● Dune Site

Photo Base 1994
Digital Orthophoto
Quarter Quadrangles

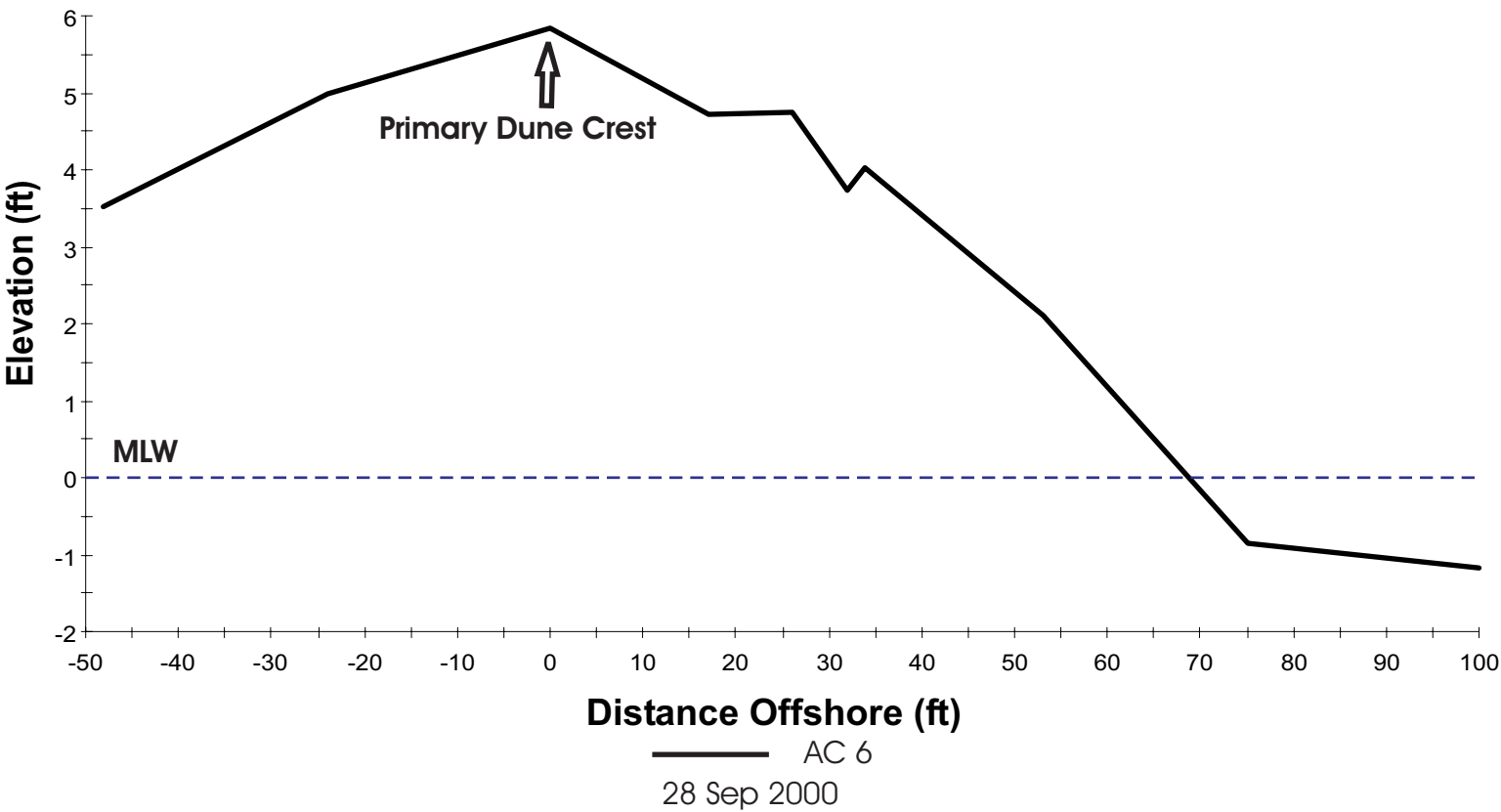


Appendix B

Individual Dune Inventory Sheets

AC6	AC28	AC59
AC7	AC32 & 33	AC61
AC11 & 13	AC35	AC62
AC14 & 15	AC37	AC65
AC 16	AC39	AC66
AC 17	AC41	AC67a
AC 18	AC49	AC67b
AC19 & 20	AC50	AC68
AC22	AC51	AC69a
AC25	AC57	AC69b
AC27		

ACCOMACK COUNTY DUNE SITE 6



Site Information

- 1. Date Surveyed: 28 Sep 2000
- 2. Central Coordinates: N: 581,260 ft
E: 2,793,740 ft
Virginia South State Plane Grid NAD 1927 [4502]
- 3. Profile Coordinates: N: 581,260 ft
E: 2,793,740 ft
- 4. Site Length: 910 feet
- 5. Ownership: Private Plate: 1

Site Parameters

- 6. Type: Natural
- 7. Fetch Exposure: Open Bay
- 8. Shoreline Direction of Face: South
- 9. Nearshore Gradient: 1,000 to 3,000 ft/No Bars
- 10. Morphologic Setting: Dune Field >500 ft Alongshore/Linear
- 11. Relative Stability: Stable
- 12. Underlying Substrate: Marsh
- 13. Structure or Fill: N/A

Site Measurements

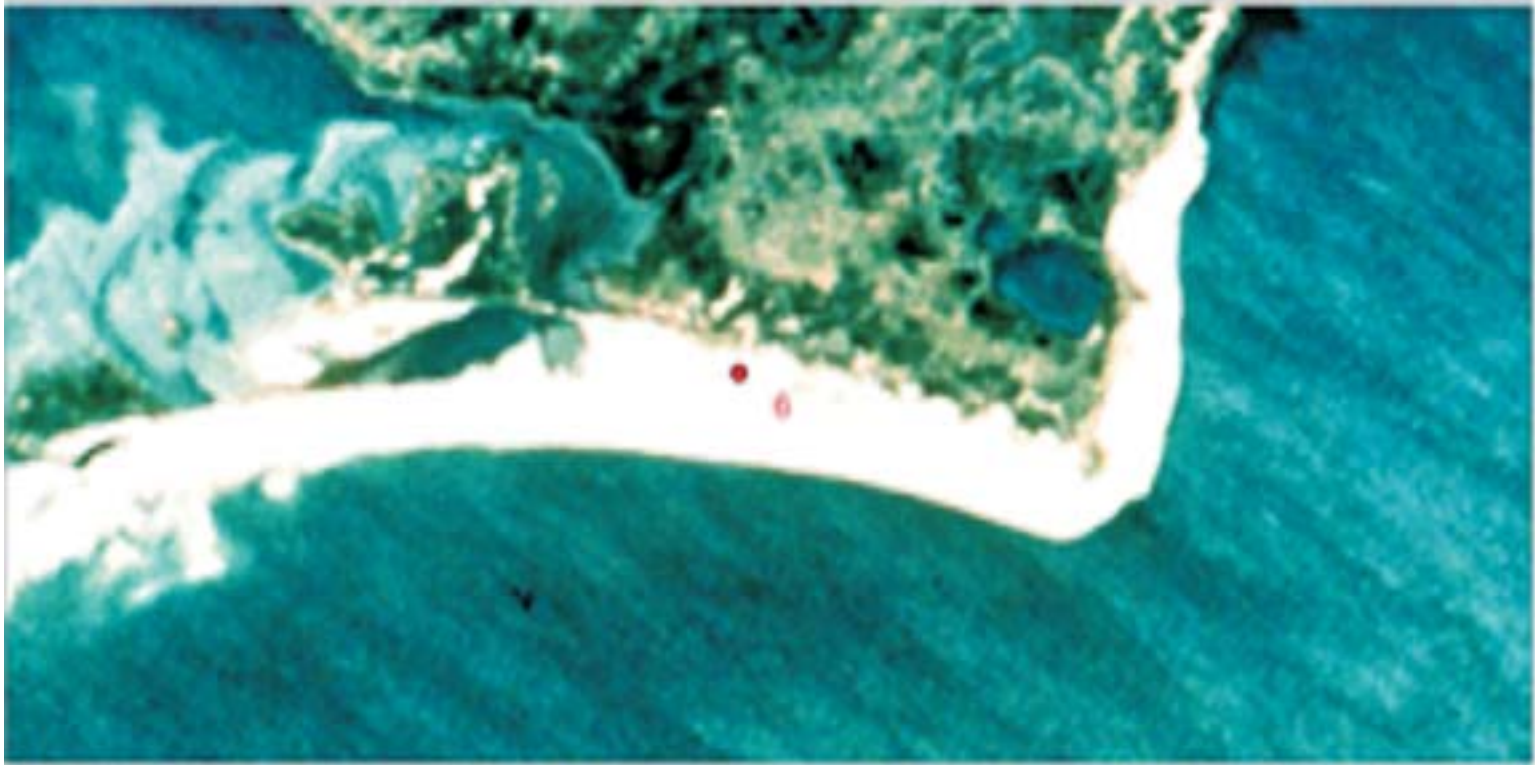
- Primary Dune:
 - 14. Crest Elevation (ft MLW): 5.7
 - 15. Extent from Crest: Landward (ft): 48
 - 16. Extent from Crest: To MLW (ft): 68
- Secondary Dune:
 - 17. Crest Elevation (ft MLW): N/A
 - 18. Extent between Second and Primary Crest (ft): N/A
 - 19. Second Crest – Landward (ft): N/A

Vegetation Communities

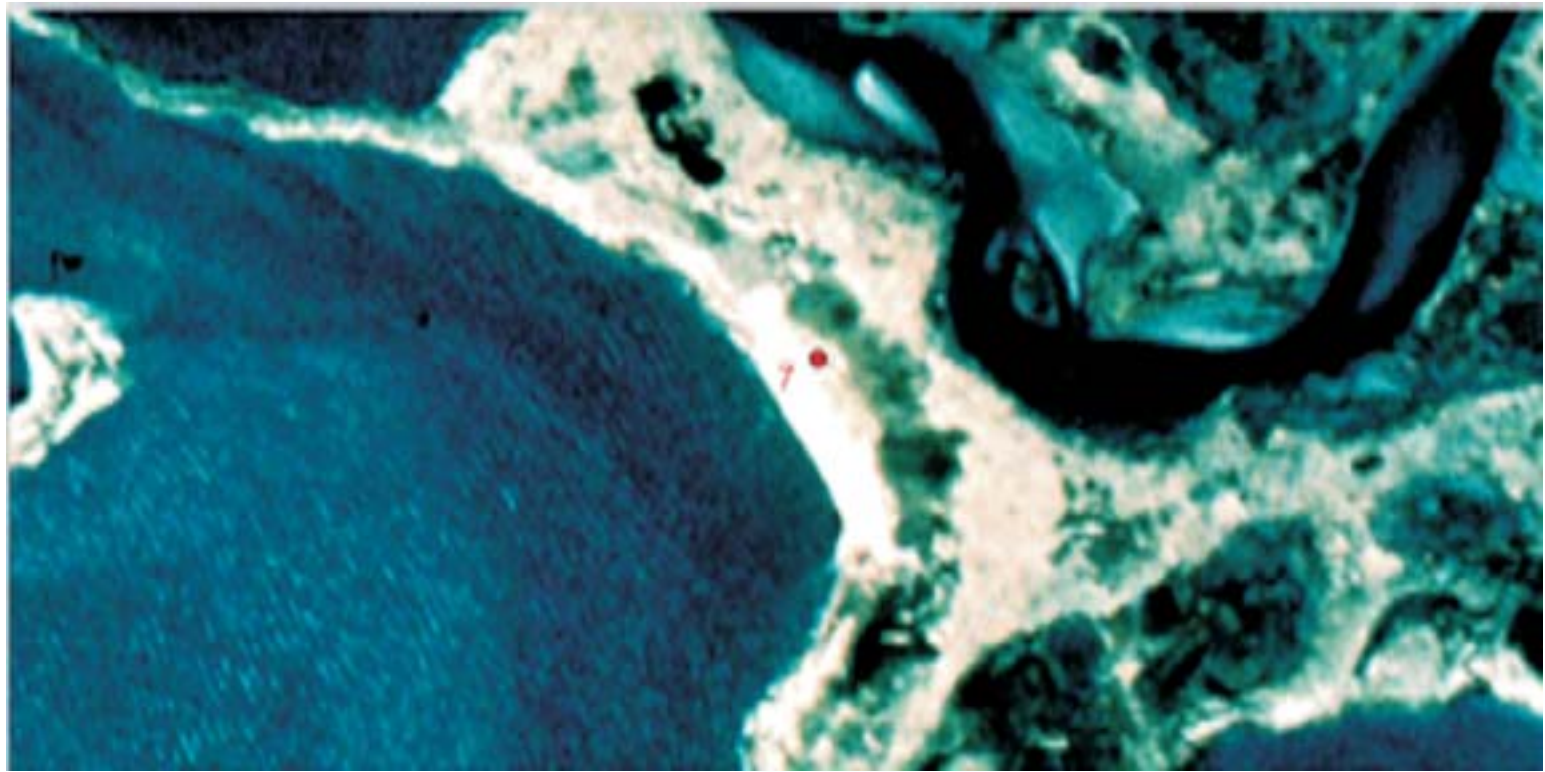
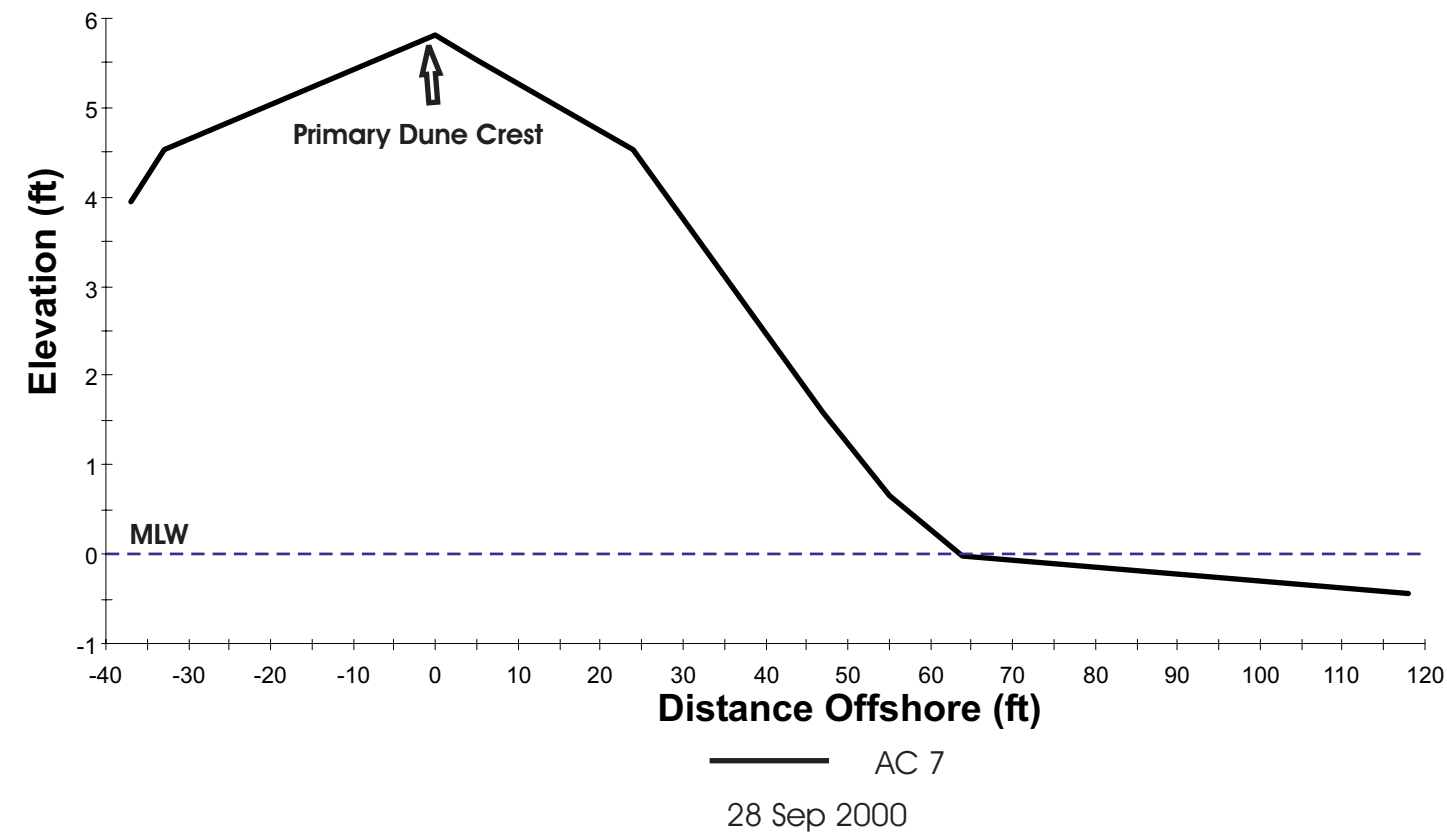
- 20. Primary Dune: *Spartina patens* (Saltmeadow hay)
Panicum virgatum (Switch grass)
Solidago sempervirens (Seaside goldenrod)
- 21. Secondary Dune: N/A

22. Remarks:

Site AC 6 rests on the south side of a marsh peninsula with numerous pocket beaches along its perimeter shoreline. The site has developed a primary dune in a relatively stable geomorphic setting.



ACCOMACK COUNTY DUNE SITE 7



Site Information

- 1. Date Surveyed: 28 Sep 2000
- 2. Central Coordinates: N: 578,850 ft
E: 2,811,210 ft
Virginia South State Plane Grid NAD 1927 [4502]
- 3. Profile Coordinates: N: 578,850 ft
E: 2,811,210 ft
- 4. Site Length: 180 ft
- 5. Ownership: Private Plate: 2

Site Parameters

- 6. Type: Natural
- 7. Fetch Exposure: Riverine, Bay Influenced
- 8. Shoreline Direction of Face: Southwest
- 9. Nearshore Gradient: >3,000 ft/No Bars
- 10. Morphologic Setting: <500 ft Alongshore/Pocket Beach
- 11. Relative Stability: Stable
- 12. Underlying Substrate: Marsh
- 13. Structure or Fill:

Site Measurements

- Primary Dune:
 - 14. Crest Elevation (ft MLW): 5.9
 - 15. Extent from Crest: Landward (ft): 37
 - 16. Extent from Crest: To MLW (ft): 63
- Secondary Dune:
 - 17. Crest Elevation (ft MLW): N/A
 - 18. Extent between Second and Primary Crest (ft): N/A
 - 19. Second Crest – Landward (ft): N/A

Vegetation Communities

- 20. Primary Dune: *Spartina patens* (Saltmeadow hay)
- 21. Secondary Dune: N/A
- 22. Remarks:

Site AC 7 is a small pocket beach/dune residing in Rock Gut.

ACCOMACK COUNTY DUNE SITE 11

Site Information

1. Date Surveyed: 27 May 2004

2. Central Coordinates:

3. Profile Coordinates:

N: 559,310 ft

N: 559,310 ft

E: 2,811,330 ft

E: 2,811,330 ft

Virginia South State Plane Grid NAD 1927 [4502]

4. Site Length: 180 ft

5. Ownership: Private

Plate: 3

Site Parameters

6. Type: Natural

7. Fetch Exposure: Riverine, Bay Influenced

8. Shoreline Direction of Face: Northwest

9. Nearshore Gradient: >3,000 ft/No Bars

10. Morphologic Setting: <500 ft Alongshore/Shallow Bay

11. Relative Stability: Stable

12. Underlying Substrate: Marsh

13. Structure or Fill: N/A

Site Measurements

Primary Dune:

14. Crest Elevation (ft MLW): N/A

15. Extent from Crest: Landward (ft): N/A

16. Extent from Crest: To MLW (ft): N/A

Secondary Dune:

17. Crest Elevation (ft MLW): N/A

18. Extent between Second and Primary Crest (ft): N/A

19. Second Crest – Landward (ft): N/A

Vegetation Communities

20. Primary Dune:

Spartina patens (Saltmeadow hay)

21. Secondary Dune: N/A

22. Remarks:

AC 11 is a small, low embayed dune on the protected downdrift end of Jobbs Island.



Site AC 11



Site AC 13

ACCOMACK COUNTY DUNE SITE 13

Site Information

1. Date Surveyed: 27 May 2004

2. Central Coordinates:

3. Profile Coordinates:

N: 563,590 ft

N: 563,590 ft

E: 2,807,460 ft

E: 2,807,460 ft

Virginia South State Plane Grid NAD 1927 [4502]

4. Site Length: 180 ft

5. Ownership: Private

Plate: 4

Site Parameters

6. Type: Natural

7. Fetch Exposure: Open Bay

8. Shoreline Direction of Face: Southwest

9. Nearshore Gradient: >3,000 ft/No Bars

10. Morphologic Setting: <500 ft Alongshore/Shallow Bay

11. Relative Stability: Stable

12. Underlying Substrate: Marsh

13. Structure or Fill: N/A

Site Measurements

Primary Dune:

14. Crest Elevation (ft MLW): N/A

15. Extent from Crest: Landward (ft): N/A

16. Extent from Crest: To MLW (ft): N/A

Secondary Dune:

17. Crest Elevation (ft MLW): N/A

18. Extent between Second and Primary Crest (ft): N/A

19. Second Crest – Landward (ft): N/A

Vegetation Communities

20. Primary Dune:

Spartina patens (Saltmeadow hay)

21. Secondary Dune: N/A

22. Remarks:

AC 13 is bounded by two marsh headlands and occurs as a stable embayment that is partially sheltered by Ebb Point.

ACCOMACK COUNTY DUNE SITE 14

Site Information

1. Date Surveyed: 27 May 2004

2. Central Coordinates:

N: 562,260 ft

E: 2,806,480 ft

Virginia South State Plane Grid NAD 1927 [4502]

3. Profile Coordinates:

N: 562,260 ft

E: 2,806,480 ft

4. Site Length: 180 ft

5. Ownership: Private

Plate: 4

Site Parameters

6. Type: Natural

7. Fetch Exposure: Open Bay

8. Shoreline Direction of Face: West

9. Nearshore Gradient: >3,000 ft/No Bars

10. Morphologic Setting: <500 ft Alongshore/Shallow Bay

11. Relative Stability: Stable

12. Underlying Substrate: Marsh

13. Structure or Fill: N/A

Site Measurements

Primary Dune:

14. Crest Elevation (ft MLW): N/A

15. Extent from Crest: Landward (ft): N/A

16. Extent from Crest: To MLW (ft): N/A

Secondary Dune:

17. Crest Elevation (ft MLW): N/A

18. Extent between Second and Primary Crest (ft): N/A

19. Second Crest – Landward (ft): N/A

Vegetation Communities

20. Primary Dune:

Spartina patens (Saltmeadow hay)

21. Secondary Dune: N/A

22. Remarks:

AC 14 is a pocket beach/dune in Cedar Cove that is partially sheltered by Flood Point.



AC 14



AC 15

ACCOMACK COUNTY DUNE SITE 15

Site Information

1. Date Surveyed: 27 May 2004

2. Central Coordinates:

N: 559,750 ft

E: 2,805,720 ft

Virginia South State Plane Grid NAD 1927 [4502]

3. Profile Coordinates:

N: 559,750 ft

E: 2,805,720 ft

4. Site Length: 180 ft

5. Ownership: Private

Plate:

Site Parameters

6. Type: Natural

7. Fetch Exposure: Riverine, Bay Influenced

8. Shoreline Direction of Face: Northwest

9. Nearshore Gradient: >3,000 ft/No Bars

10. Morphologic Setting: Creek Mouth Barrier/Spit

11. Relative Stability: Stable

12. Underlying Substrate: Marsh

13. Structure or Fill: N/A

Site Measurements

Primary Dune:

14. Crest Elevation (ft MLW): N/A

15. Extent from Crest: Landward (ft): N/A

16. Extent from Crest: To MLW (ft): N/A

Secondary Dune:

17. Crest Elevation (ft MLW): N/A

18. Extent between Second and Primary Crest (ft): N/A

19. Second Crest – Landward (ft): N/A

Vegetation Communities

20. Primary Dune:

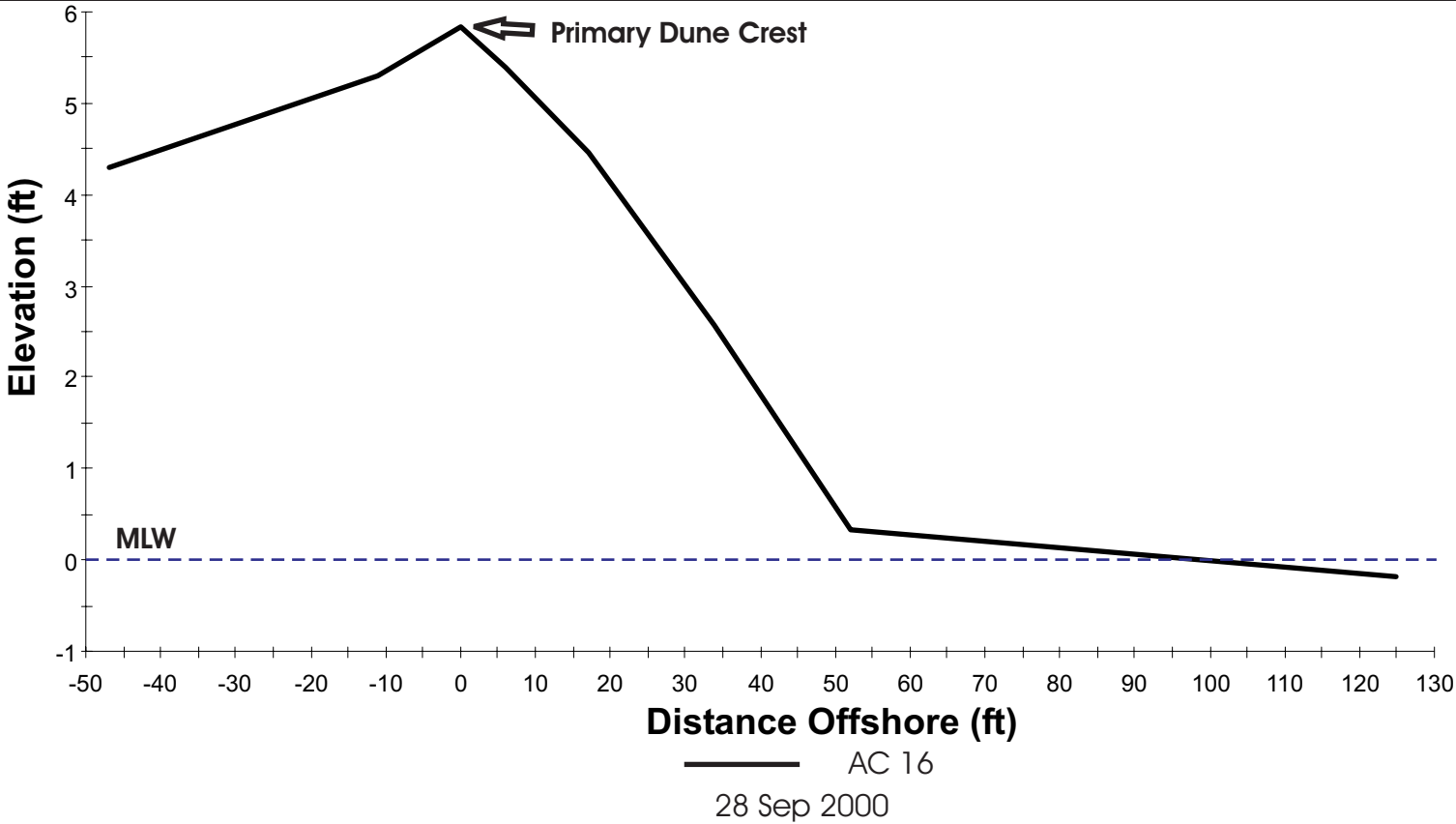
Spartina patens (Saltmeadow hay)

21. Secondary Dune: N/A

22. Remarks:

AC 15 occurs along a spit that enters Bagwell Bay from the South. It is separated from AC 16 by an exposed marsh/peat headland.

ACCOMACK COUNTY DUNE SITE 16



Site Information

- 1. Date Surveyed: 28 Sep 2000
- 2. Central Coordinates: N: 559,530 ft E: 2,805,270 ft
- 3. Profile Coordinates: N: 559,530 ft E: 2,805,270 ft
- Virginia South State Plane Grid NAD 1927 [4502]
- 4. Site Length: 450 ft
- 5. Ownership: Private Plate: 4

Site Parameters

- 6. Type: Natural
- 7. Fetch Exposure: Open Bay
- 8. Shoreline Direction of Face: Northwest
- 9. Nearshore Gradient: >3,000 ft/No Bars
- 10. Morphologic Setting: Isolated <500 ft Alongshore/Linear
- 11. Relative Stability: Land Transgressive/Erosional
- 12. Underlying Substrate: Marsh
- 13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
 - 14. Crest Elevation (ft MLW): 5.9
 - 15. Extent from Crest: Landward (ft): 47
 - 16. Extent from Crest: To MLW (ft): 93
- Secondary Dune:
 - 17. Crest Elevation (ft MLW): N/A
 - 18. Extent between Second and Primary Crest (ft): N/A
 - 19. Second Crest – Landward (ft): N/A

Vegetation Communities

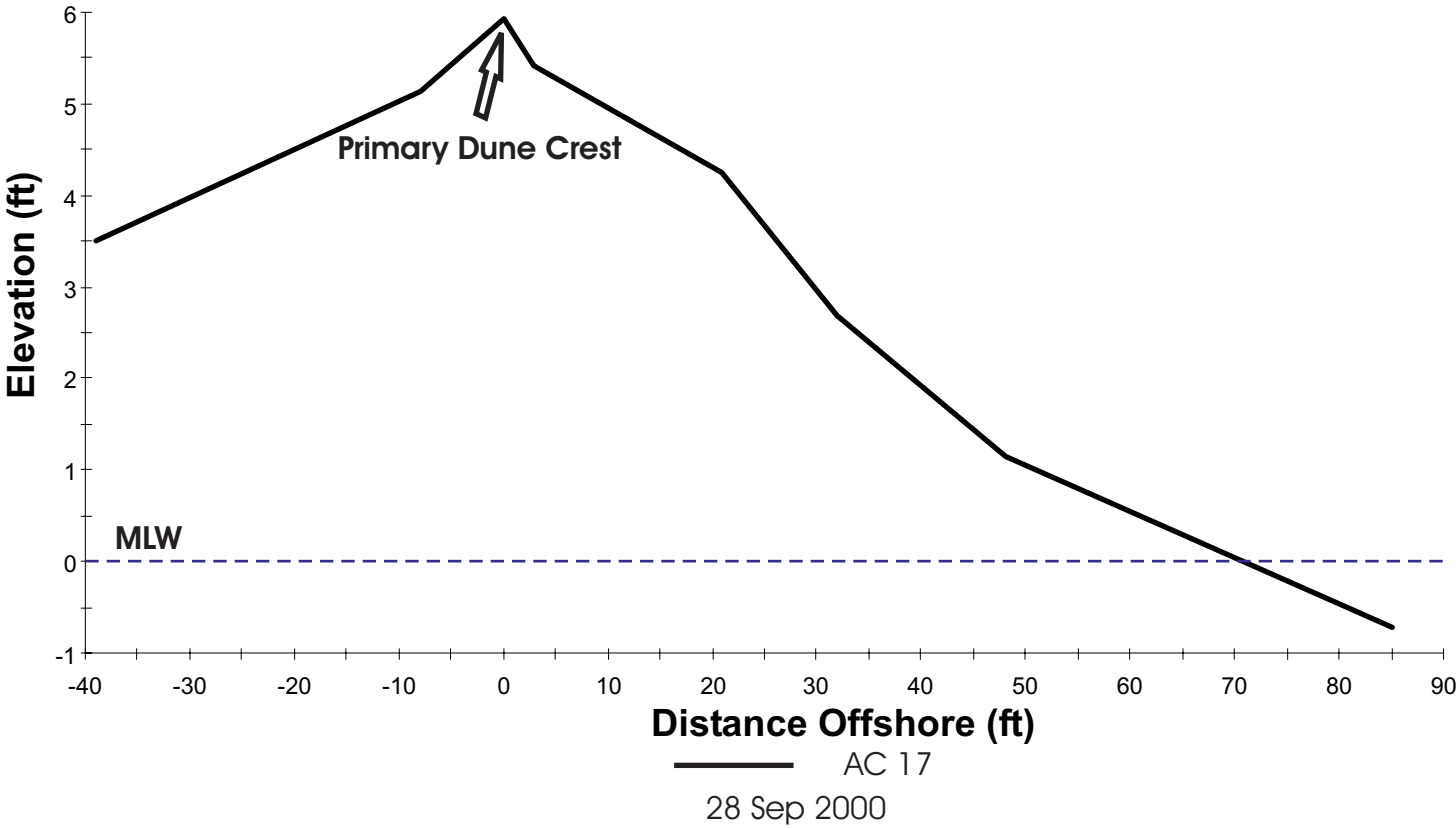
- 20. Primary Dune: *Spartina patens* (Saltmeadow hay)
- 21. Secondary Dune: N/A

22. Remarks:
AC 16 is the open bay exposed coast part of the beach/spit entering Bagwell Bay. It is bounded on the north by a marsh headland which separates it from AC 15. It is bounded in the south by Simpson Point.



Looking west.

ACCOMACK COUNTY DUNE SITE 17



Site Information

- 1. Date Surveyed: 28 Sep 2000
- 2. Central Coordinates: N: 558,250 ft E: 2,805,640 ft
- 3. Profile Coordinates: N: 558,250 ft E: 2,805,640 ft
- Virginia South State Plane Grid NAD 1927 [4502]
- 4. Site Length: 950 ft
- 5. Ownership: Private Plate: 4

Site Parameters

- 6. Type: Natural
- 7. Fetch Exposure: Open Bay
- 8. Shoreline Direction of Face: West
- 9. Nearshore Gradient: >3,000 ft/Extensive Bars
- 10. Morphologic Setting: Dune Field >500 ft Alongshore/Shallow Bay
- 11. Relative Stability: Stable
- 12. Underlying Substrate: Upland
- 13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
 - 14. Crest Elevation (ft MLW): 6.0
 - 15. Extent from Crest: Landward (ft): 39
 - 16. Extent from Crest: To MLW (ft): 70
- Secondary Dune:
 - 17. Crest Elevation (ft MLW): N/A
 - 18. Extent between Second and Primary Crest (ft): N/A
 - 19. Second Crest – Landward (ft): N/A

Vegetation Communities

- 20. Primary Dune: *Spartina patens* (Saltmeadow hay)
- 21. Secondary Dune: N/A

22. Remarks:
AC 17 is a long, stable, shallow embayment south of Simpson Point. It is bounded on the north by Simpson Point and on the south by a small marsh headland.

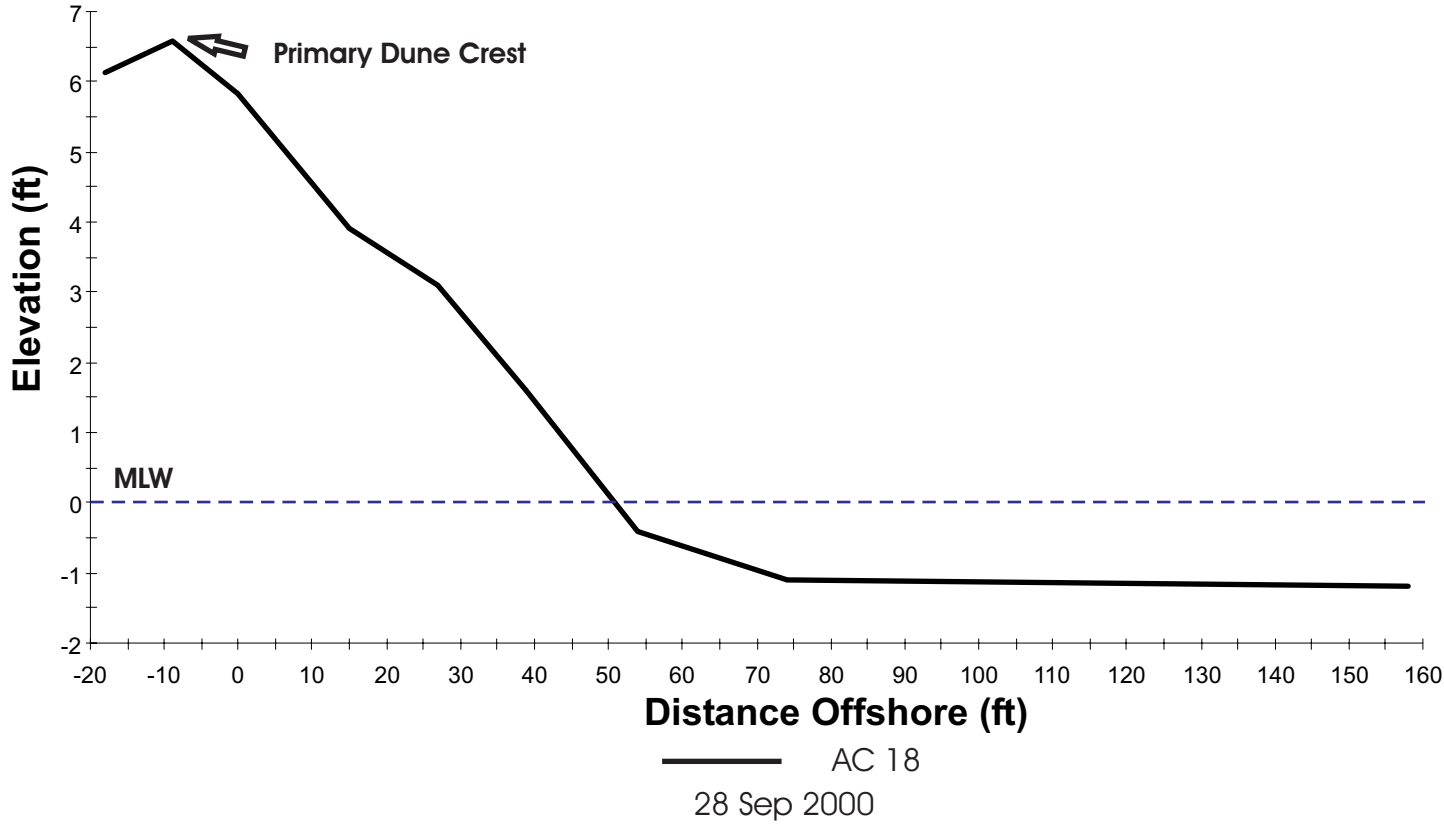


Looking north along low primary dune.



Looking south toward marsh headland.

ACCOMACK COUNTY DUNE SITE 18



Site Information

1. **Date Surveyed:** 28 Sep 2000
2. **Central Coordinates:** N: 550,510 ft
E: 2,803,050 ft
3. **Profile Coordinates:** N: 550,510 ft
E: 2,803,050 ft
- Virginia South State Plane Grid NAD 1927 [4502]
4. **Site Length:** 1,100 ft
5. **Ownership:** Private
- Plate: 5

Site Parameters

6. **Type:** Natural
7. **Fetch Exposure:** Riverine, Bay Influenced
8. **Shoreline Direction of Face:** Northwest
9. **Nearshore Gradient:** 1,000 to 3,000 ft/No Bars
10. **Morphologic Setting:** Dune Field >500 ft Alongshore/Linear
11. **Relative Stability:** Stable
12. **Underlying Substrate:** Marsh
13. **Structure or Fill:** N/A

Site Measurements

- Primary Dune:**
14. **Crest Elevation (ft MLW):** 6.6
15. **Extent from Crest: Landward (ft):** 17
16. **Extent from Crest: To MLW (ft):** 51
- Secondary Dune:**
17. **Crest Elevation (ft MLW):** N/A
18. **Extent between Second and Primary Crest (ft):** N/A
19. **Second Crest – Landward (ft):** N/A

Vegetation Communities

20. **Primary Dune:**
Ammophila breviligulata (American beach grass)
21. **Secondary Dune:** N/A

22. **Remarks:**
AC 18 is a long, low dune field on Jacks Island.



ACCOMACK COUNTY DUNE SITE 19

Site Information

1. Date Surveyed: 27 May 2004

2. Central Coordinates:
N: 548,010 ft
E: 2,801,980 ft
Virginia South State Plane Grid NAD 1927 [4502]

3. Profile Coordinates:
N: 548,010 ft
E: 2,801,980 ft
4. Site Length: 200 feet
5. Ownership: Private
- Plate: 5

Site Parameters

6. Type: Natural
7. Fetch Exposure: Open Bay
8. Shoreline Direction of Face: South
9. Nearshore Gradient: 1,000 to 3,000 ft/No Bars
10. Morphologic Setting: Isolated/Linear
11. Relative Stability: Stable
12. Underlying Substrate: Marsh
13. Structure or Fill: N/A

Site Measurements

Primary Dune:

14. Crest Elevation (ft MLW): N/A
15. Extent from Crest: Landward (ft): N/A
16. Extent from Crest: To MLW (ft): N/A

Secondary Dune:

17. Crest Elevation (ft MLW): N/A
18. Extent between Second and Primary Crest (ft): N/A
19. Second Crest – Landward (ft): N/A

Vegetation Communities

20. Primary Dune: *Spartina patens* (Saltmeadow hay)
Panicum virgatum (Switch grass)
Solidago sempervirens (Seaside goldenrod)
21. Secondary Dune: N/A

22. Remarks:

AC 19 is a small dune site on the south side of Sandy Point bounded by marsh headlands.



AC 19



AC 20

ACCOMACK COUNTY DUNE SITE 20

Site Information

1. Date Surveyed: 27 May 2004

2. Central Coordinates:
N: 548,140 ft
E: 2,802,730 ft
Virginia South State Plane Grid NAD 1927 [4502]

3. Central Coordinates:
N: 548,140 ft
E: 2,802,730 ft
4. Site Length: 800 ft
5. Ownership: Private
- Plate: 5

Site Parameters

6. Type: Natural
7. Fetch Exposure: Open Bay
8. Shoreline Direction of Face: South
9. Nearshore Gradient: >3,000 ft/No Bars
10. Morphologic Setting: Dune Field >500 ft Alongshore/Linear
11. Relative Stability: Land Transgressive/Erosional
12. Underlying Substrate: Marsh
13. Structure or Fill: N/A

Site Measurements

Primary Dune:

14. Crest Elevation (ft MLW): N/A
15. Extent from Crest: Landward (ft): N/A
16. Extent from Crest: To MLW (ft): N/A

Secondary Dune:

17. Crest Elevation (ft MLW): N/A
18. Extent Between Second and Primary Crest (ft): N/A
19. Second Crest – Landward (ft): N/A

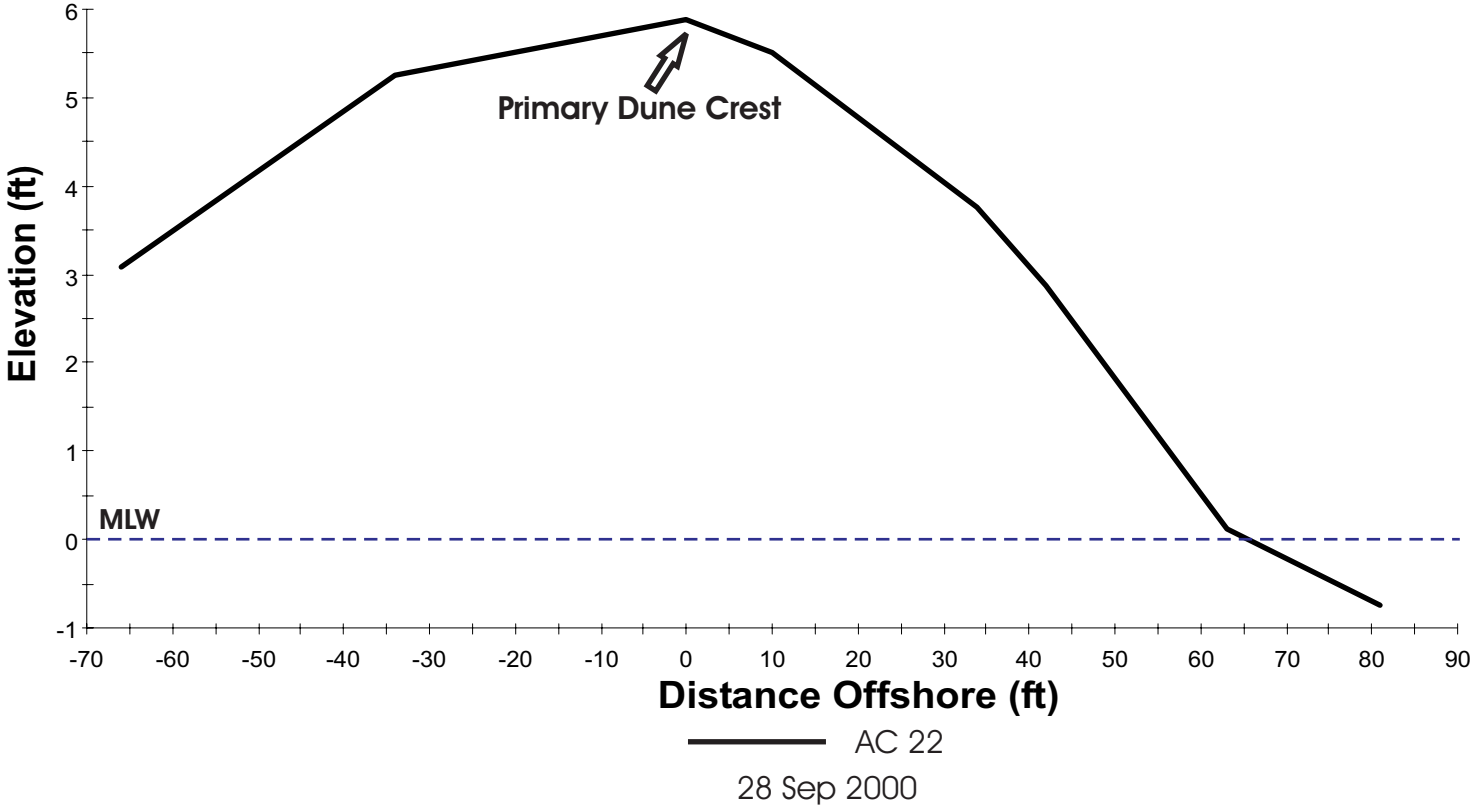
Vegetation Communities

20. Primary Dune: *Ammophila breviligulata* (American beach grass)
21. Secondary Dune: N/A

22. Remarks:

Site AC 20 lies east of AC 19 and occurs as a low, wide primary dune field.

ACCOMACK COUNTY DUNE SITE 22



Site Information

- 1. Date Surveyed: 28 Sep 2000
- 2. Central Coordinates: N: 548,950 ft E: 2,796,650 ft
- 3. Central Coordinates: N: 548,950 ft E: 2,796,650 ft
- Virginia South State Plane Grid NAD 1927 [4502]
- 4. Site Length: 590 ft
- 5. Ownership: Private Plate: 6

Site Parameters

- 6. Type: Natural
- 7. Fetch Exposure: Open Bay
- 8. Shoreline Direction of Face: Northwest
- 9. Nearshore Gradient: >3,000 ft/No Bars
- 10. Morphologic Setting: Dune Field >500 ft Alongshore/Linear
- 11. Relative Stability: Land Transgressive/Erosional
- 12. Underlying Substrate: Marsh
- 13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
 - 14. Crest Elevation (ft MLW): 5.9
 - 15. Extent from Crest: Landward (ft): 66
 - 16. Extent from Crest: To MLW (ft): 65
- Secondary Dune:
 - 17. Crest Elevation (ft MLW): N/A
 - 18. Extent Between Second and Primary Crest (ft): N/A
 - 19. Second Crest – Landward (ft): N/A

Vegetation Communities

- 20. Primary Dune: *Ammophila breviligulata* (American beach grass)
- 21. Secondary Dune: N/A
- 22. Remarks:

AC 22 is a low dune field on the northwest end of Webb Island. A single fishing shack can be seen in the adjacent photos.

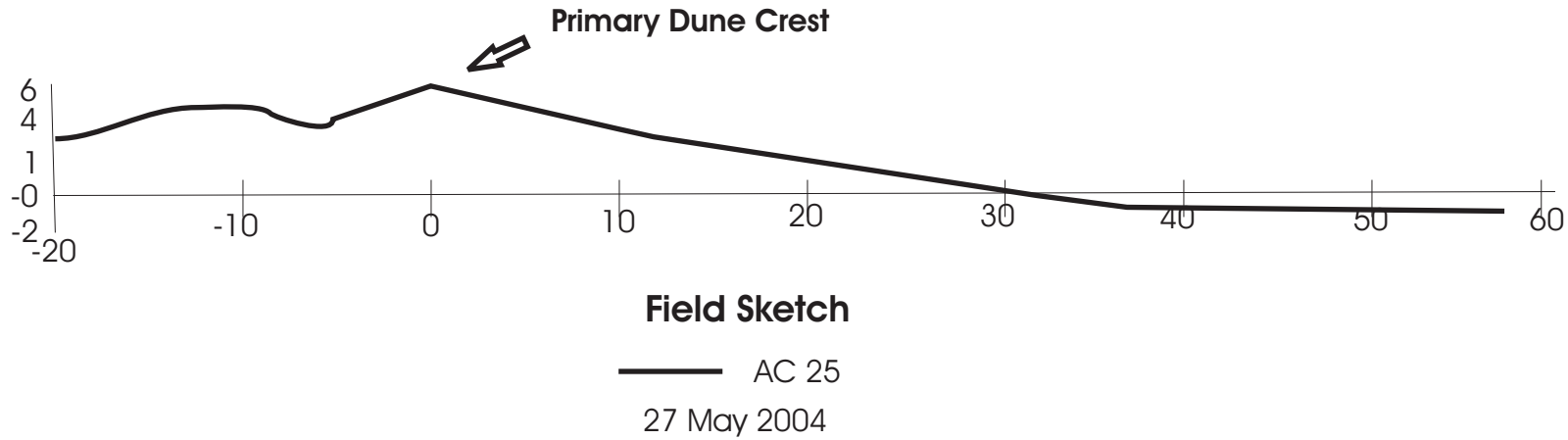


Looking east toward the south end of the site.



Looking east toward the north end of the site.

ACCOMACK COUNTY DUNE SITE 25



Site Information

1. Date Surveyed: 27 May 2004
2. Central Coordinates: N: 546,880 ft
E: 2,782,630 ft
3. Central Coordinates: N: 546,880 ft
E: 2,782,630 ft
4. Site Length: 590 ft
5. Ownership: Private
- Plate: 7

Site Parameters

6. Type: Natural
7. Fetch Exposure: Open Bay
8. Shoreline Direction of Face: Northeast
9. Nearshore Gradient: >3,000 ft/No Bars
10. Morphologic Setting: Isolated/Pocket Beach
11. Relative Stability: Stable
12. Underlying Substrate: Marsh
13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
14. Crest Elevation (ft MLW): 4.7
 15. Extent from Crest: Landward (ft): 66
 16. Extent from Crest: To MLW (ft): 55
- Secondary Dune:
17. Crest Elevation (ft MLW): N/A
 18. Extent Between Second and Primary Crest (ft): N/A
 19. Second Crest – Landward (ft): N/A

Vegetation Communities

20. Primary Dune: *Ammophila breviligulata* (American beach grass)
21. Secondary Dune: N/A
22. Remarks:

AC 25 is a small pocket beach/dune bounded by marsh headlands.

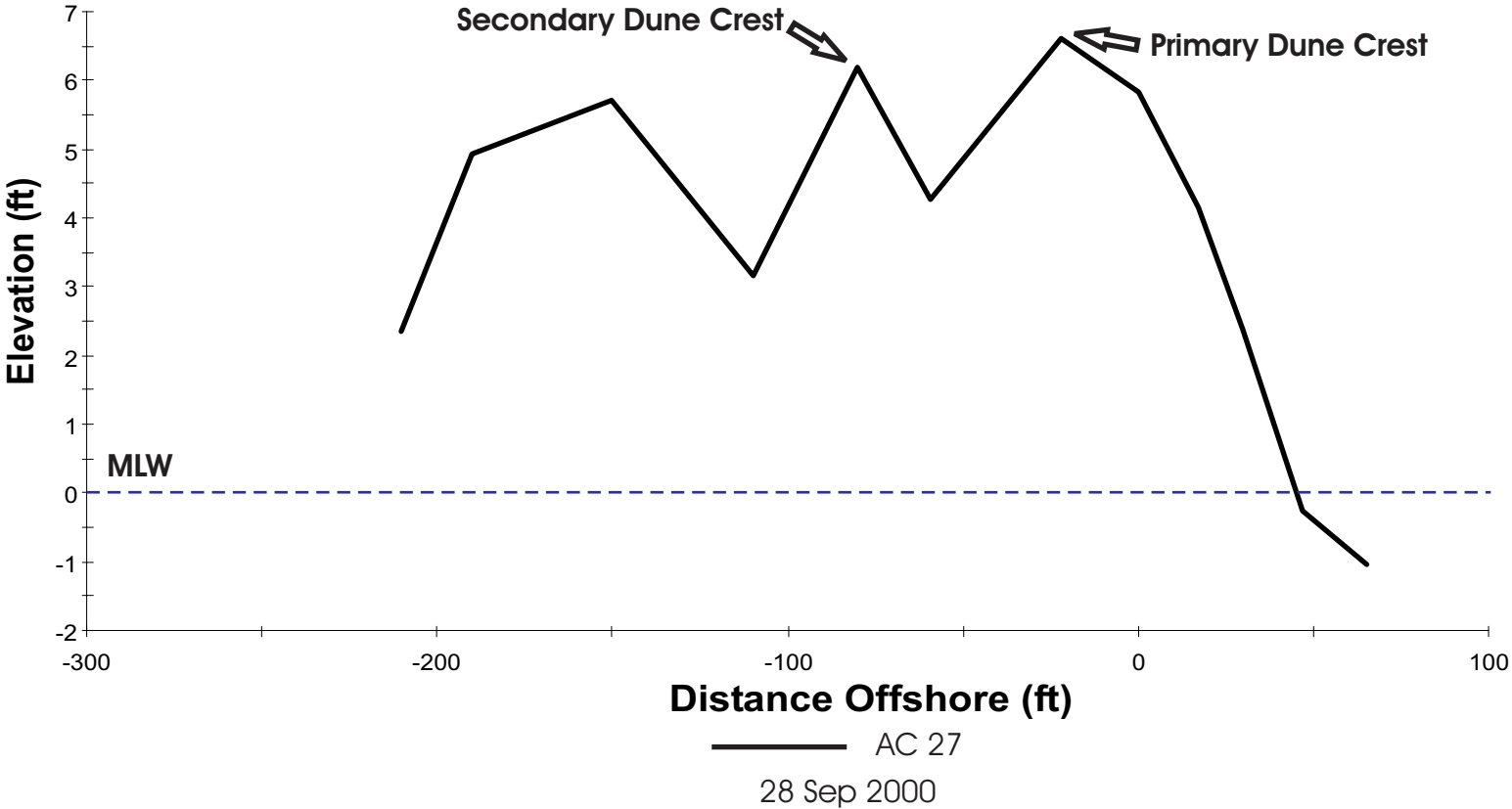


Looking north.



Looking south.

ACCOMACK COUNTY DUNE SITE 27



Site Information

- 1. Date Surveyed: 28 Sep 2000
- 2. Central Coordinates: N: 541,610 ft E: 2,775,780 ft
- 3. Profile Coordinates: N: 541,610 ft E: 2,775,780 ft
- Virginia South State Plane Grid NAD 1927 [4502]
- 4. Site Length: 970 feet
- 5. Ownership: Private Plate: 8

Site Parameters

- 6. Type: Natural
- 7. Fetch Exposure: Open Bay
- 8. Shoreline Direction of Face: Northwest
- 9. Nearshore Gradient: >3,000 ft/Extensive Bars
- 10. Morphologic Setting: Dune Field >500 ft Alongshore/Linear
- 11. Relative Stability: Stable
- 12. Underlying Substrate: Marsh
- 13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
- 14. Crest Elevation (ft MLW): 6.6
 - 15. Extent from Crest: Landward (ft): 37
 - 16. Extent from Crest: To MLW (ft): 64
- Secondary Dune:
- 17. Crest Elevation (ft MLW): 5.74
 - 18. Extent Between Second and Primary Crest (ft): 58
 - 19. Second Crest – Landward (ft): 130

Vegetation Communities

- 20. Primary Dune: *Ammophila breviligulata* (American beach grass)
- 21. Secondary Dune: N/A

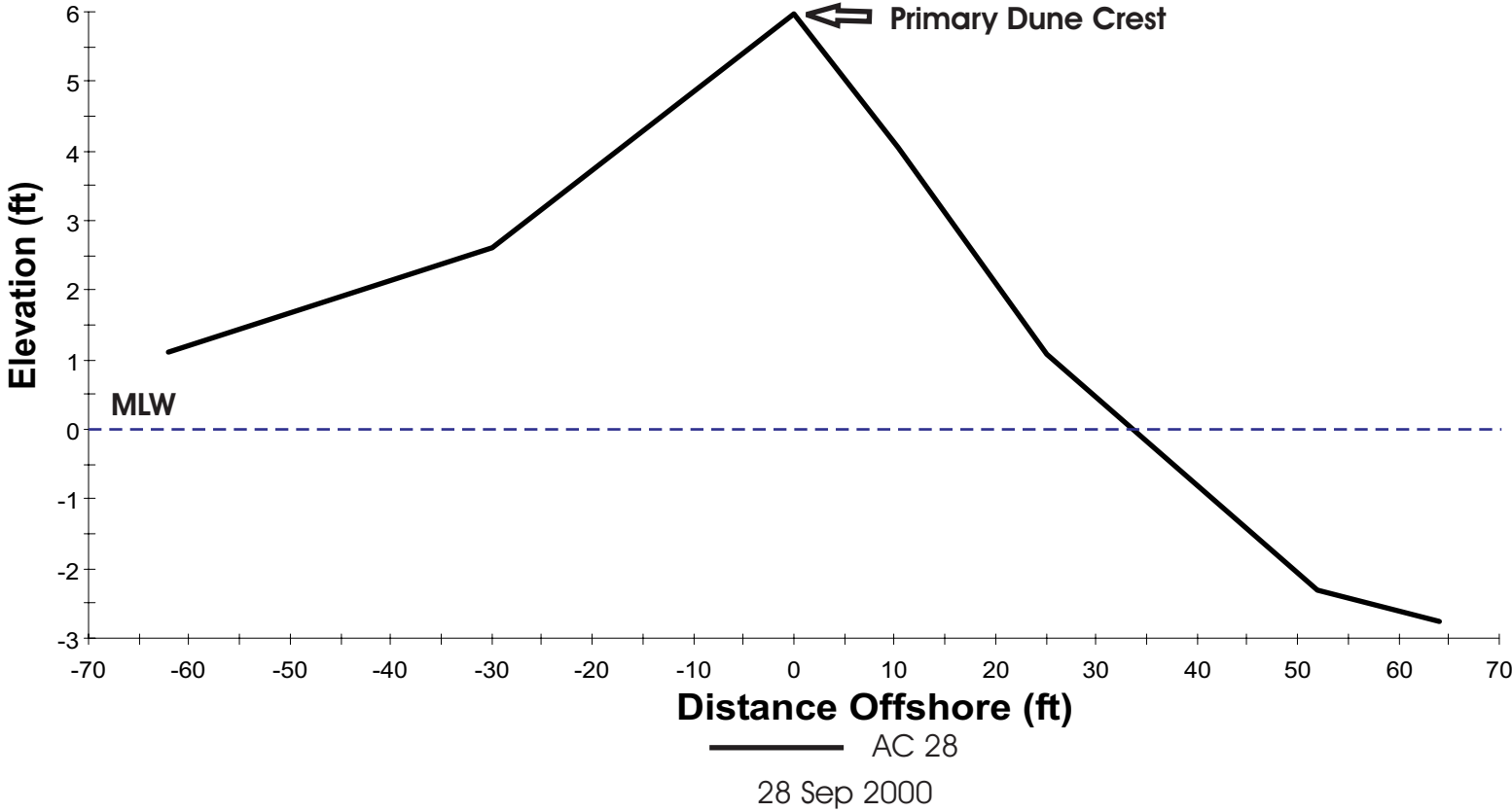
22. Remarks:

AC 27 resides on the north side of Beach Island. The west boundary is controlled by a long shoal, and it has developed a secondary dune over time.



Looking southwest from survey boat.

ACCOMACK COUNTY DUNE SITE 28



Site Information

- 1. Date Surveyed: 28 Sep 2000
- 2. Central Coordinates: N: 540,460 ft E: 2,775,760 ft
- 3. Central Coordinates: N: 540,460 ft E: 2,775,760 ft
- Virginia South State Plane Grid NAD 1927 [4502]
- 4. Site Length: 850 ft
- 5. Ownership: Private Plate: 8

Site Parameters

- 6. Type: Natural
- 7. Fetch Exposure: Open Bay
- 8. Shoreline Direction of Face: Southwest
- 9. Nearshore Gradient: >3,000 ft/Extensive Bars
- 10. Morphologic Setting: Dune Field >500 ft Alongshore/Linear
- 11. Relative Stability: Stable
- 12. Underlying Substrate: Marsh
- 13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
 - 14. Crest Elevation (ft MLW): 6.0
 - 15. Extent from Crest: Landward (ft): 62
 - 16. Extent from Crest: To MLW (ft): 34
- Secondary Dune:
 - 17. Crest Elevation (ft MLW): N/A
 - 18. Extent Between Second and Primary Crest (ft): N/A
 - 19. Second Crest – Landward (ft): N/A

Vegetation Communities

- 20. Primary Dune:
 - Solidago sempervirens* (Seaside goldenrod)
 - Ammophila breviligulata* (American beach grass)
- 21. Secondary Dune: N/A

- 22. Remarks:

AC 28 is a long, low dune field along the southwest side of Beach Island. It is bounded on the south by a marsh headland and on the north by a long shoal.

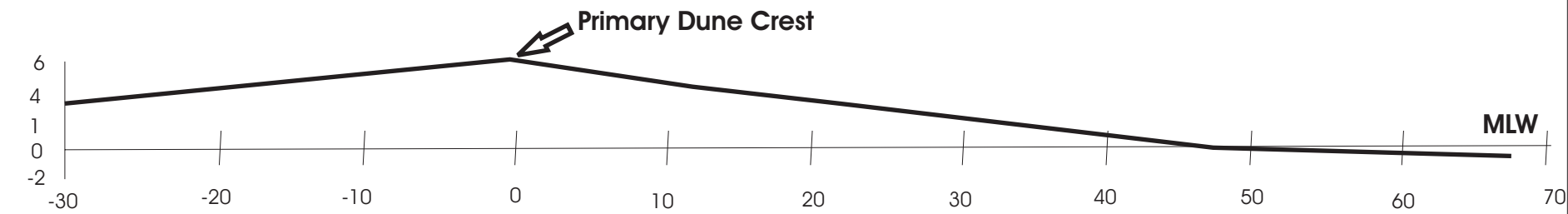


Looking north along primary dune.



Looking south along primary dune.

ACCOMACK COUNTY DUNE SITE 32/33



Field Sketch
— AC 32 / 33
27 May 2004

Site Information

1. **Date Surveyed:** 27 May 2004
2. **AC 32 Coordinates:** N: 527,360 ft
E: 2,782,770 ft
3. **AC 33 Coordinates:** N: 527,030 ft
E: 2,782,540 ft
Virginia South State Plane Grid NAD 1927 [4502]
4. **Site Length:** 250 ft/150 ft
5. **Ownership:** Private **Plate:** 9

Site Parameters

6. **Type:** Natural
7. **Fetch Exposure:** Open Bay
8. **Shoreline Direction of Face:** Northwest
9. **Nearshore Gradient:** 1,000 to 3,000 ft/Bars
10. **Morphologic Setting:** Isolated/Linear
11. **Relative Stability:** Land Transgressive/Erosional
12. **Underlying Substrate:** Marsh
13. **Structure or Fill:** N/A

Site Measurements

- Primary Dune:**
14. **Crest Elevation (ft MLW):** 6.0
15. **Extent from Crest: Landward (ft):** 30
16. **Extent from Crest: To MLW (ft):** 47
Secondary Dune:
17. **Crest Elevation (ft MLW):** N/A
18. **Extent Between Second and Primary Crest (ft):** N/A
19. **Second Crest – Landward (ft):** N/A

Vegetation Communities

20. **Primary Dune:** *Solidago sempervirens* (Seaside goldenrod)
Ammophila breviligulata (American beach grass)
Spartina patens (Saltmeadow hay)
Toxicodendron radicans (Poison Ivy)
21. **Secondary Dune:** N/A
22. **Remarks:**

AC 32 is a small dune field that has a cottage on the primary dune.
AC 33 is a small pocket beach/dune separated from AC 32 by a small marsh headland.

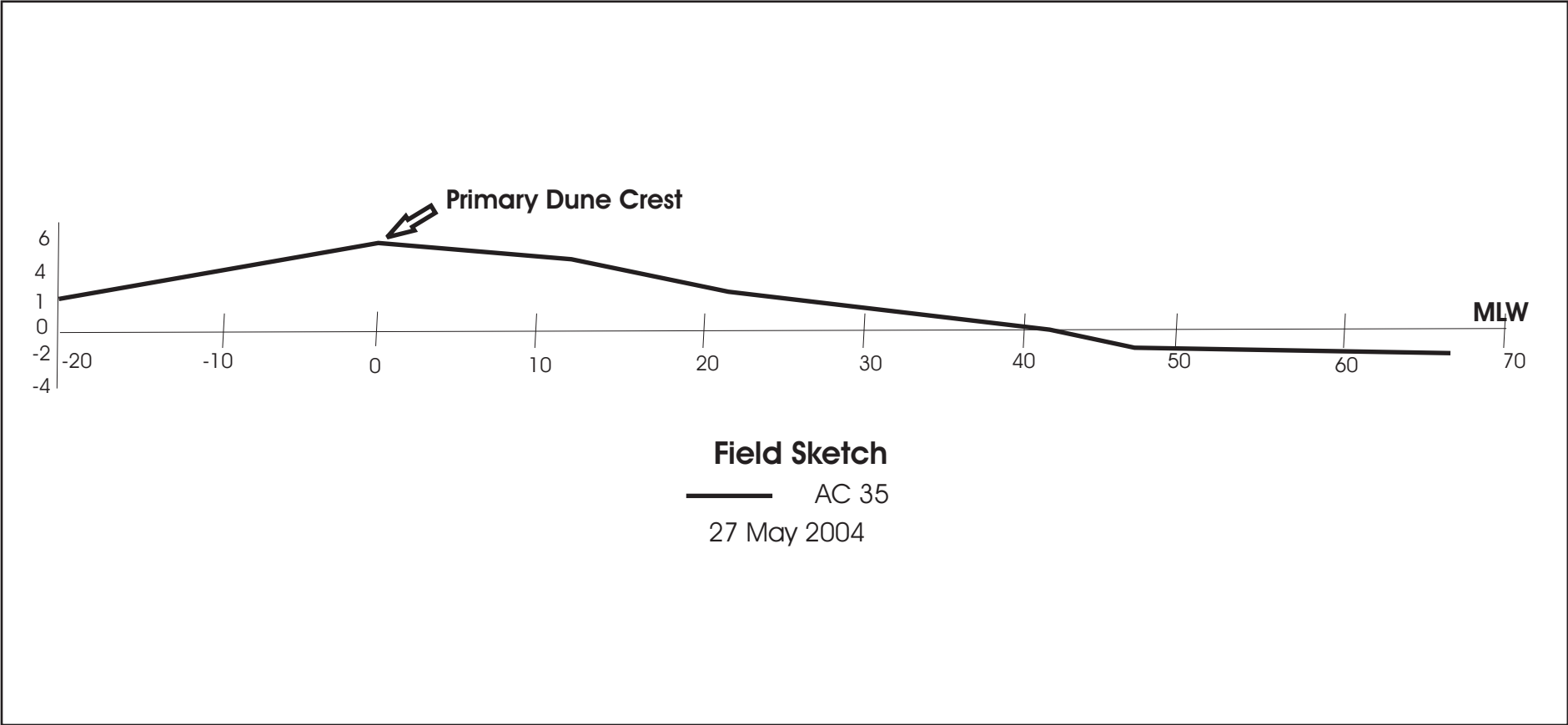


AC 32



AC 33

ACCOMACK COUNTY DUNE SITE 35



Site Information

- 1. Date Surveyed: 27 May 2004
- 2. Central Coordinates: N: 525,780 ft
E: 2,778,910 ft
- 3. Central Coordinates: N: 525,780 ft
E: 2,778,910 ft
- Virginia South State Plane Grid NAD 1927 [4502]
- 4. Site Length: 400 ft
- 5. Ownership: Private
- Plate: 9

Site Parameters

- 6. Type: Natural
- 7. Fetch Exposure: Open Bay
- 8. Shoreline Direction of Face: Northwest
- 9. Nearshore Gradient: >3,000 ft/No Bars
- 10. Morphologic Setting: Isolated/Linear
- 11. Relative Stability: Land Transgressive/Erosional
- 12. Underlying Substrate: Marsh
- 13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
 - 14. Crest Elevation (ft MLW): 5.5
 - 15. Extent from Crest: Landward (ft): 23
 - 16. Extent from Crest: To MLW (ft): 41
- Secondary Dune:
 - 17. Crest Elevation (ft MLW): N/A
 - 18. Extent Between Second and Primary Crest (ft): N/A
 - 19. Second Crest – Landward (ft): N/A

Vegetation Communities

- 20. Primary Dune: *Solidago sempervirens* (Seaside goldenrod)
Ammophila breviligulata (American beach grass)
Spartina patens (Saltmeadow hay)
Toxicodendron radicans (Poison Ivy)
- 21. Secondary Dune: N/A
- 22. Remarks:



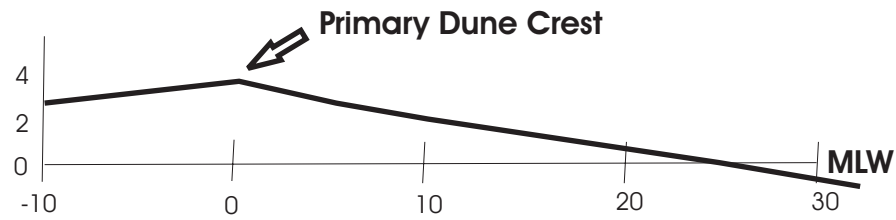
Looking southwest.



Looking northeast.

AC 35 is a dune field north of Back Creek which is bounded by marsh headlands.

ACCOMACK COUNTY DUNE SITE 37



Field Sketch

AC 37
27 May 2004



Looking north from survey boat.

Site Information

1. Date Surveyed: 27 May 2004
2. Central Coordinates: N: 526,300 ft
E: 2,777,580 ft
3. Profile Coordinates: N: 526,300 ft
E: 2,777,580 ft
Virginia South State Plane Grid NAD 1927 [4502]
4. Site Length: 180 feet
5. Ownership: Private Plate: 9

Site Parameters

6. Type: Natural
7. Fetch Exposure: Open Bay
8. Shoreline Direction of Face: Northeast
9. Nearshore Gradient: 1,000 to 3,000 ft/No Bars
10. Morphologic Setting: Spit
11. Relative Stability: Land Transgressive/Erosional
12. Underlying Substrate: Marsh
13. Structure or Fill: N/A

Site Measurements

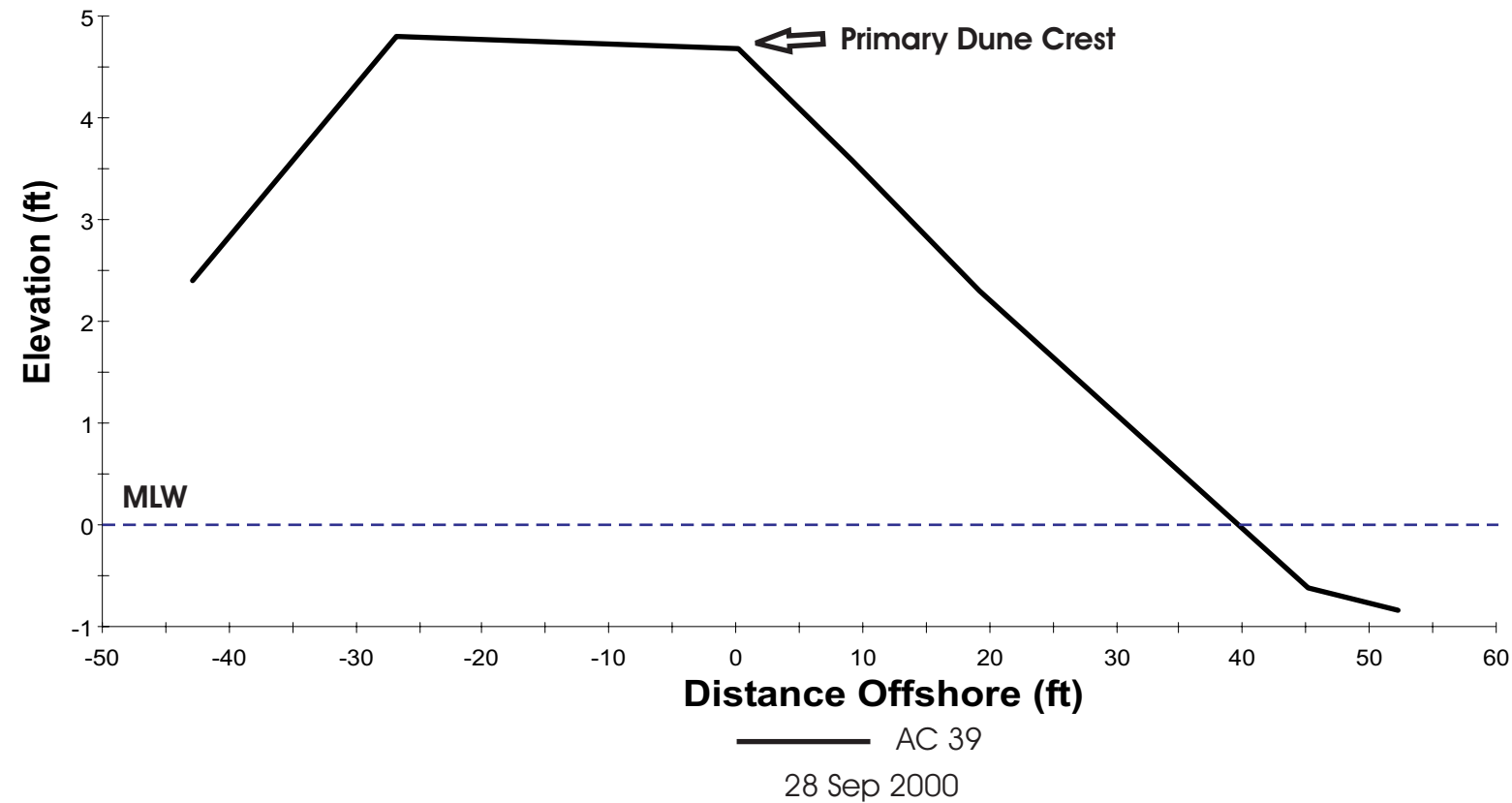
- Primary Dune:
14. Crest Elevation (ft MLW): 4.0
15. Extent from Crest: Landward (ft): 13
16. Extent from Crest: To MLW (ft): 25
Secondary Dune:
17. Crest Elevation (ft MLW): N/A
18. Extent Between Second and Primary Crest (ft): N/A
19. Second Crest – Landward (ft): N/A

Vegetation Communities

20. Primary Dune: *Solidago sempervirens* (Seaside goldenrod)
Ammophila breviligulata (American beach grass)
Spartina patens (Saltmeadow hay)
Toxicodendron radicans (Poison Ivy)
21. Secondary Dune: N/A
22. Remarks:

AC 37 is a small dune that has developed at the end of a small spit entering Back Creek from the north.

ACCOMACK COUNTY DUNE SITE 39



Site Information

1. Date Surveyed: 28 Sep 2000
2. Central Coordinates: N: 519,540 ft
E: 2,771,540 ft
3. Central Coordinates: N: 519,540 ft
E: 2,771,540 ft
- Virginia South State Plane Grid NAD 1927 [4502]
4. Site Length: 210 ft
5. Ownership: Private
- Plate: 10

Site Parameters

6. Type: Natural
7. Fetch Exposure: Open Bay
8. Shoreline Direction of Face: West
9. Nearshore Gradient: >3,000 ft/Extensive Bars
10. Morphologic Setting: Isolated <500 ft Alongshore/Pocket
11. Relative Stability: Land Transgressive/Erosional
12. Underlying Substrate: Marsh
13. Structure or Fill: N/A

Site Measurements

Primary Dune:

14. Crest Elevation (ft MLW): 4.7
15. Extent from Crest: Landward (ft): 43
16. Extent from Crest: To MLW (ft): 39

Secondary Dune: None

17. Crest Elevation (ft MLW): N/A
18. Extent Between Second and Primary Crest (ft): N/A
19. Second Crest – Landward (ft): N/A

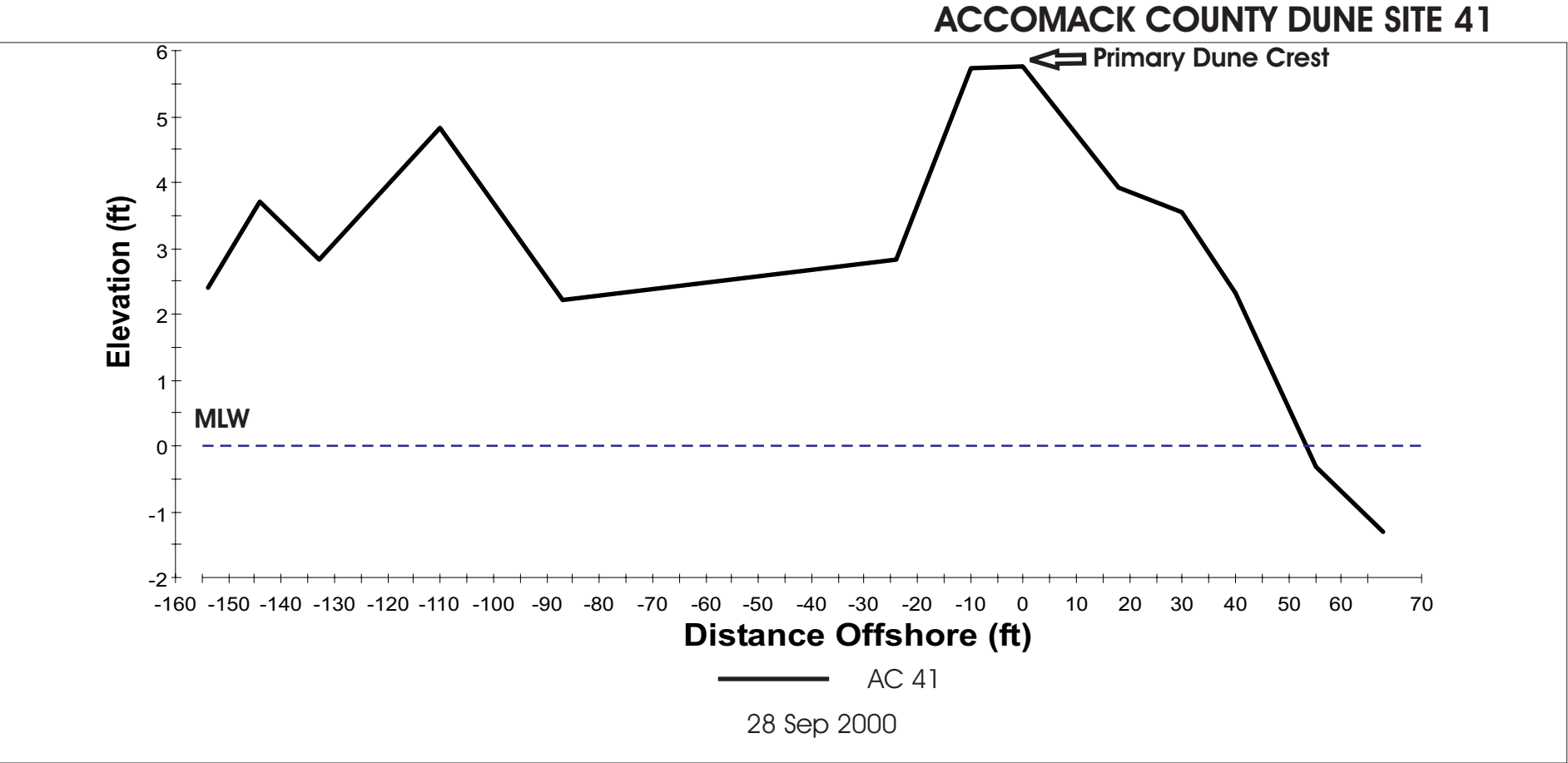
Vegetation Communities

20. Primary Dune: *Spartina patens* (Saltmeadow hay)

21. Secondary Dune: N/A

22. Remarks:

AC 39 is a broad, low, pocket dune on the south shore of Parkers Marsh.



Site Information		
1. Date Surveyed:	28 Sep 2000	
2. Central Coordinates:	N: 518,220 ft	3. Central Coordinates: N: 518,220 ft
	E: 2,772,510 ft	E: 2,772,510 ft
Virginia South State Plane Grid NAD 1927 [4502]		
4. Site Length:	1,380 ft	
5. Ownership:	Private	Plate: 10

Site Parameters	
6. Type:	Natural
7. Fetch Exposure:	Riverine, Bay Influenced
8. Shoreline Direction of Face:	Southeast
9. Nearshore Gradient:	0 to 1,000 ft/No Bars
10. Morphologic Setting:	Dune Field >500 ft Alongshore/Shallow Bay
11. Relative Stability:	Accretionary
12. Underlying Substrate:	Marsh
13. Structure or Fill:	N/A

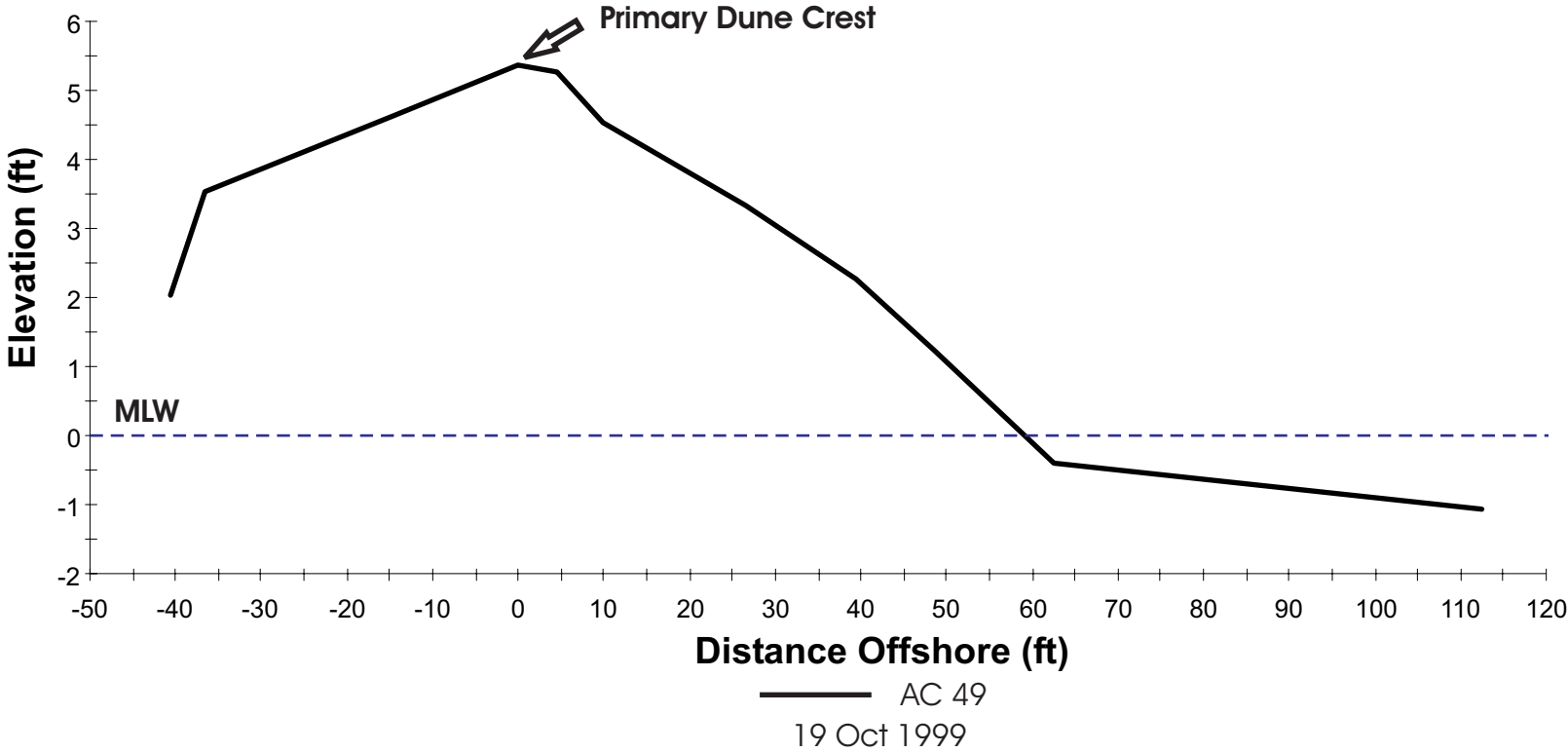


Site Measurements	
Primary Dune:	
14. Crest Elevation (ft MLW):	5.8
15. Extent from Crest: Landward (ft):	24
16. Extent from Crest: To MLW (ft):	53
Secondary Dune:	
17. Crest Elevation (ft MLW):	4.8
18. Extent Between Second and Primary Crest (ft):	110
19. Second Crest – Landward (ft):	44

Vegetation Communities	
20. Primary Dune:	<i>Spartina patens</i> (Saltmeadow hay)
21. Secondary Dune:	N/A

22. Remarks:
AC 41 is a dune field on the Occohannock Creek side of Parkers Marsh.

ACCOMACK COUNTY DUNE SITE 49



Site Information

1. Date Surveyed: 19 October 1999
2. Central Coordinates: N: 496,050 ft E: 2,761,230 ft
3. Central Coordinates: N: 496,050 ft E: 2,761,230 ft
- Virginia South State Plane Grid NAD 1927 [4502]
4. Site Length: 380 ft
5. Ownership: Private Plate: 11

Site Parameters

6. Type: Natural
7. Fetch Exposure: Open Bay
8. Shoreline Direction of Face: Northwest
9. Nearshore Gradient: 1,000 to 3,000 ft/Extensive Bars
10. Morphologic Setting: Isolated <500 ft Alongshore/Linear
11. Relative Stability: Land Transgressive/Erosional
12. Underlying Substrate: Marsh
13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
14. Crest Elevation (ft MLW): 5.4
15. Extent from Crest: Landward (ft): 40
16. Extent from Crest: To MLW (ft): 59
- Secondary Dune:
17. Crest Elevation (ft MLW): N/A
18. Extent Between Second and Primary Crest (ft): N/A
19. Second Crest – Landward (ft): N/A

Vegetation Communities

20. Primary Dune: *Spartina patens* (Saltmeadow hay)
21. Secondary Dune: N/A

22. Remarks:

AC 49 is a linear dune bounded on both ends by marsh headlands.

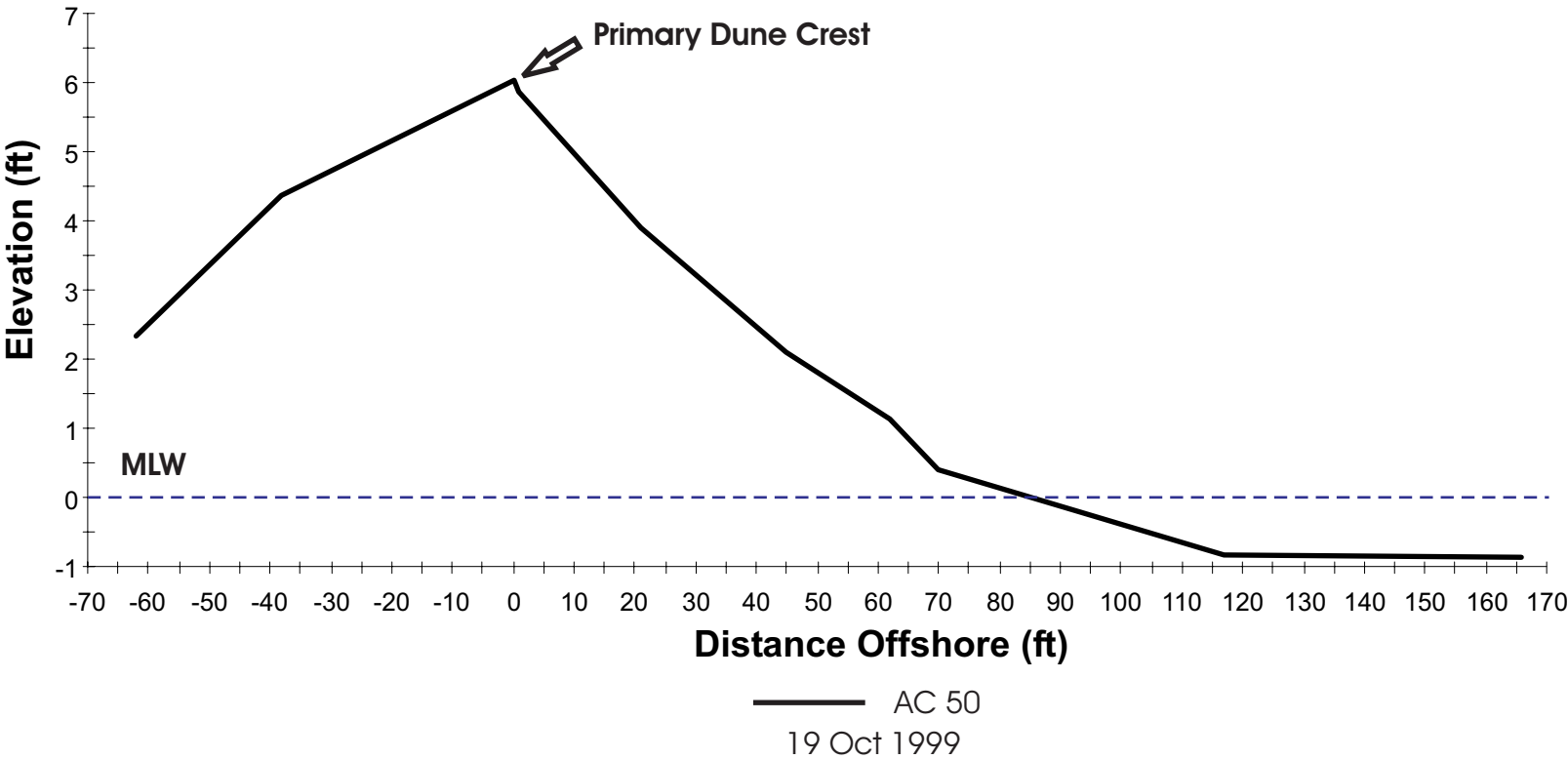


Looking north toward Blunt Point.



Looking south. Note the washovers from Hurricane Floyd.

ACCOMACK COUNTY DUNE SITE 50



Site Information

1. Date Surveyed: 19 October 1999
2. Central Coordinates: N: 493,420 ft E: 2,758,890 ft
3. Central Coordinates: N: 493,420 ft E: 2,758,890 ft
- Virginia South State Plane Grid NAD 1927 [4502]
4. Site Length: 680 ft
5. Ownership: Private Plate: 11

Site Parameters

6. Type: Natural
7. Fetch Exposure: Open Bay
8. Shoreline Direction of Face: Northwest
9. Nearshore Gradient: 1,000 to 3,000 ft/Extensive Bars
10. Morphologic Setting: Dune Field >500 ft Alongshore/Linear
11. Relative Stability: Land Transgressive/Erosional
12. Underlying Substrate: Marsh
13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
14. Crest Elevation (ft MLW): 6.0
15. Extent from Crest: Landward (ft): 62
16. Extent from Crest: To MLW (ft): 85
- Secondary Dune: None
17. Crest Elevation (ft MLW): N/A
18. Extent Between Second and Primary Crest (ft): N/A
19. Second Crest – Landward (ft): N/A

Vegetation Communities

20. Primary Dune: *Ammophila breviligulata* (American beach grass)
21. Secondary Dune: N/A
22. Remarks: Site AC 50 occupies the bay of a marsh spit feature that extends into Butcher Creek from the north. It is low and subject to washover as seen in the ground photos after Hurricane Floyd. It's position may be controlled, in part, by a large offshore sand bar.

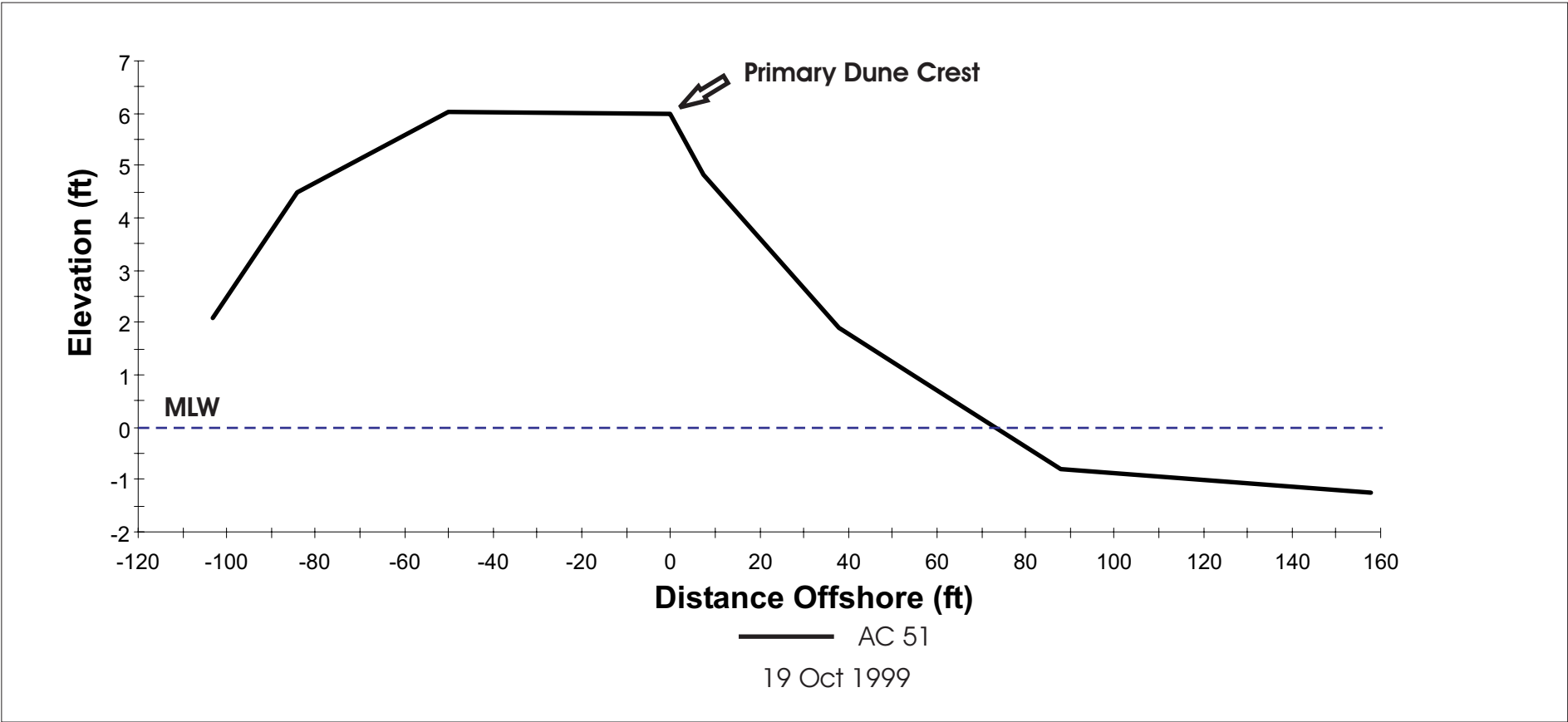


Looking north.



Looking south toward the marsh headlands at the end of the marsh spits.

ACCOMACK COUNTY DUNE SITE 51



Site Information		
1. Date Surveyed:	19 October 1999	
2. Central Coordinates:	N: 490,920 ft	3. Central Coordinates: N: 490,920 ft
	E: 2,758,400 ft	E: 2,758,400 ft
Virginia South State Plane Grid NAD 1927 [4502]		
4. Site Length:	2,850 ft	
5. Ownership:	Private	Plate: 11

Site Parameters	
6. Type:	Natural
7. Fetch Exposure:	Riverine, Bay Influenced
8. Shoreline Direction of Face:	North
9. Nearshore Gradient:	>3,000 ft/Extensive Bars
10. Morphologic Setting:	Dune Field >500 ft Alongshore/Linear
11. Relative Stability:	Stable
12. Underlying Substrate:	Marsh
13. Structure or Fill:	N/A



Looking west. Note the washover from Hurricane Floyd.



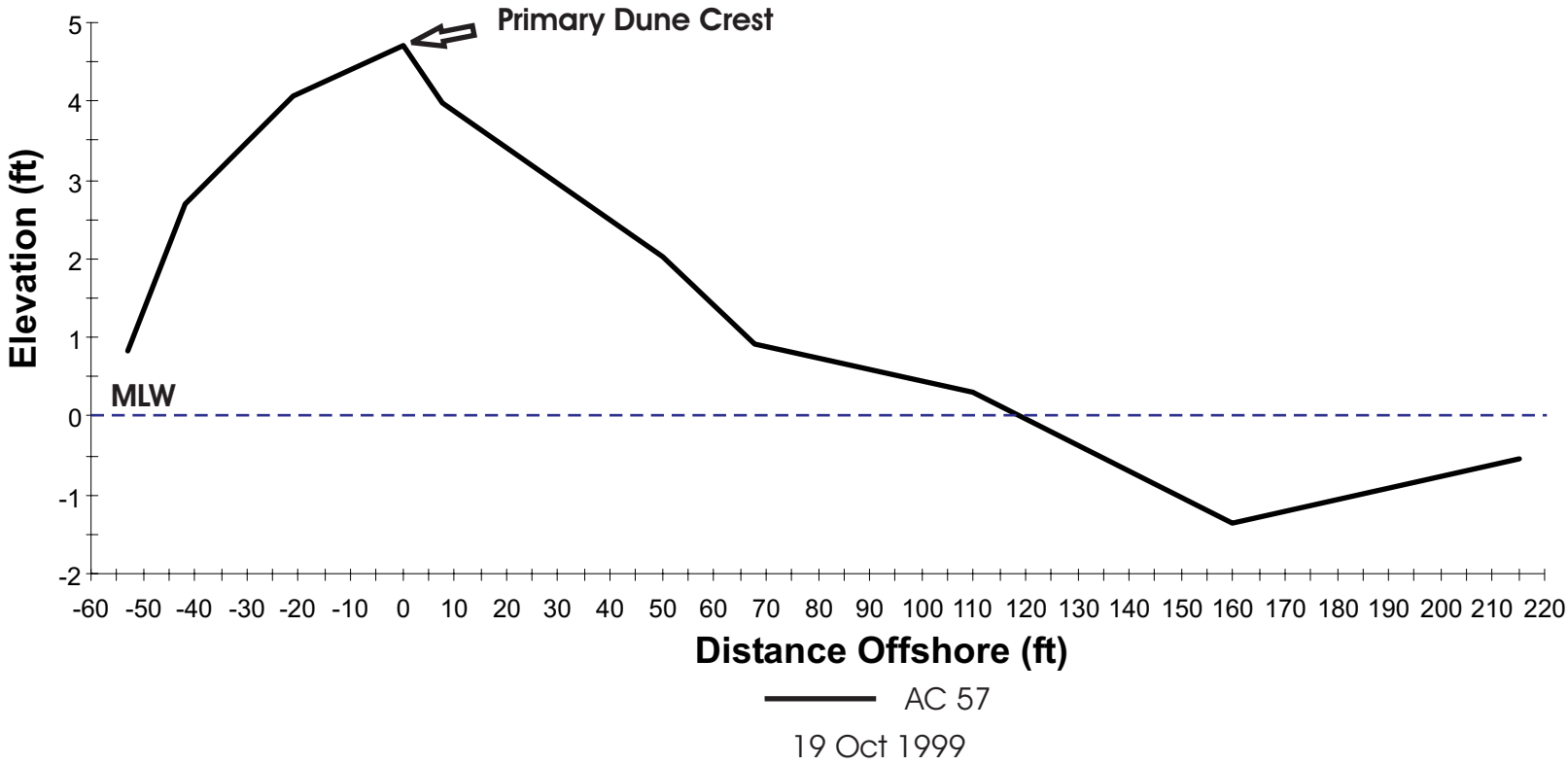
Looking east.

Site Measurements	
Primary Dune:	
14. Crest Elevation (ft MLW):	6.0
15. Extent from Crest: Landward (ft):	103
16. Extent from Crest: To MLW (ft):	72
Secondary Dune:	None
17. Crest Elevation (ft MLW):	N/A
18. Extent Between Second and Primary Crest (ft):	N/A
19. Second Crest – Landward (ft):	N/A

Vegetation Communities	
20. Primary Dune:	<i>Ammophila breviligulata</i> (American beach grass) <i>Panicum virgatum</i> (Switch grass)
21. Secondary Dune:	N/A

22. Remarks:
AC 51 is a long dune field along the south shoreline at the entrance to Butcher Creek.

ACCOMACK COUNTY DUNE SITE 57



Site Information

- 1. Date Surveyed: 19 October 1999
- 2. Central Coordinates: N: 480,940 ft E: 2,751,120 ft
- 3. Central Coordinates: N: 480,940 ft E: 2,751,120 ft
- Virginia South State Plane Grid NAD 1927 [4502]
- 4. Site Length: 270 ft
- 5. Ownership: Private Plate: 12

Site Parameters

- 6. Type: Natural
- 7. Fetch Exposure: Open Bay
- 8. Shoreline Direction of Face: North
- 9. Nearshore Gradient: 1,000 to 3,000 ft/Extensive Bars
- 10. Morphologic Setting: Isolated <500 ft Alongshore/Linear
- 11. Relative Stability: Land Transgressive/Erosional
- 12. Underlying Substrate: Marsh/Creek Bottom
- 13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
 - 14. Crest Elevation (ft MLW): 4.7
 - 15. Extent from Crest: Landward (ft): 53
 - 16. Extent from Crest: To MLW (ft): 118
- Secondary Dune: None
 - 17. Crest Elevation (ft MLW): N/A
 - 18. Extent Between Second and Primary Crest (ft): N/A
 - 19. Second Crest – Landward (ft): N/A

Vegetation Communities

- 20. Primary Dune:
 - Panicum virgatum* (Switch grass)
 - Spartina patens* (Saltmeadow hay)
- 21. Secondary Dune: N/A
- 22. Remarks:
 - AC 57 is a small isolated dune bounded by marsh headlands on the north end of Hyslop Marsh.

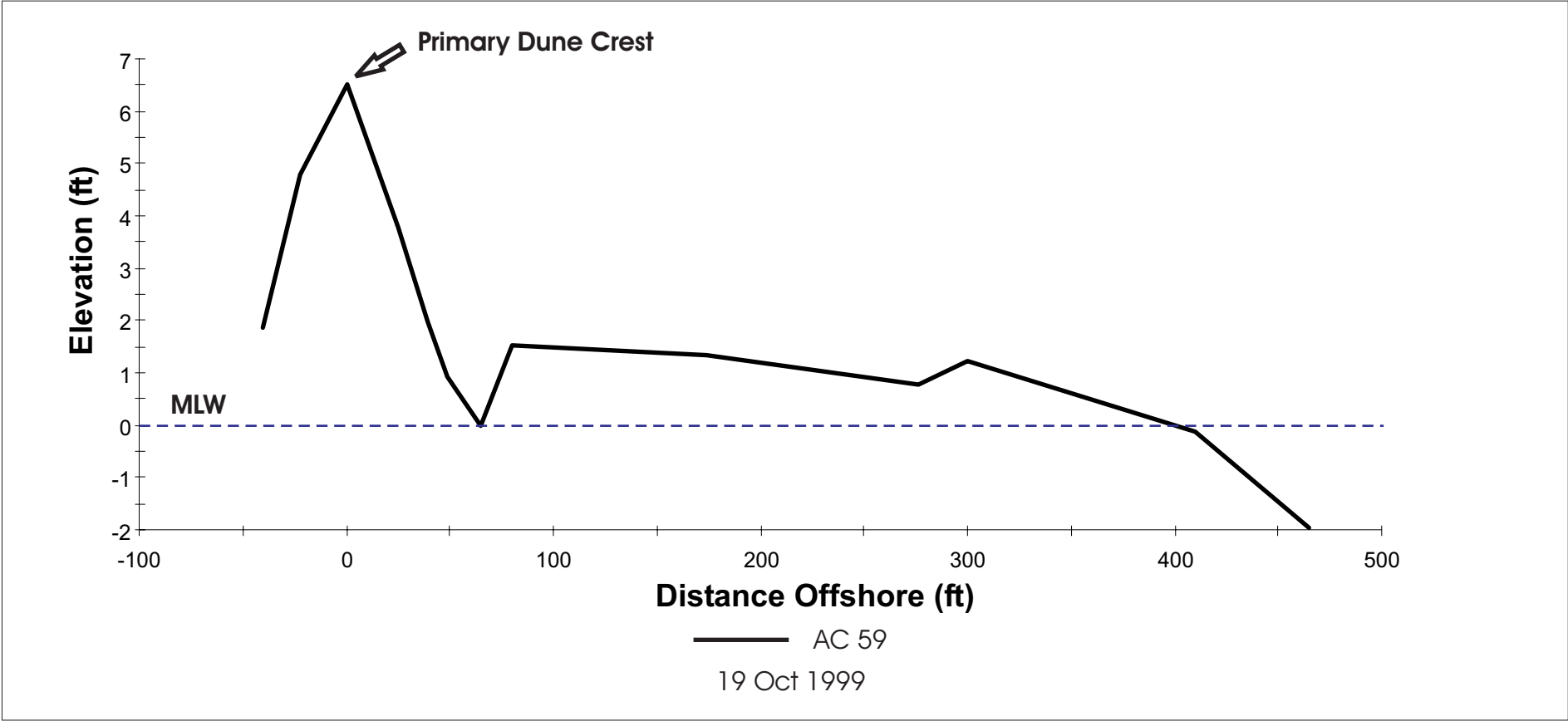


Looking north at the bounding marsh headland and the entrance to Nandua Creek.



Looking east across the primary dune.

ACCOMACK COUNTY DUNE SITE 59



Site Information		
1. Date Surveyed:	19 October 1999	
2. Central Coordinates:	N: 479,700 ft	3. Central Coordinates: N: 479,700 ft
	E: 2,750,180 ft	E: 2,750,180 ft
Virginia South State Plane Grid NAD 1927 [4502]		
4. Site Length:	270 ft	
5. Ownership:	Private	Plate: 12

Site Parameters	
6. Type:	Natural
7. Fetch Exposure:	Open Bay
8. Shoreline Direction of Face:	Northwest
9. Nearshore Gradient:	1,000 to 3,000 ft/Extensive Bars
10. Morphologic Setting:	Isolated <500 ft Alongshore/Linear
11. Relative Stability:	Stable
12. Underlying Substrate:	Marsh
13. Structure or Fill:	N/A



Looking north along the primary dune face sheared by Hurricane Floyd.



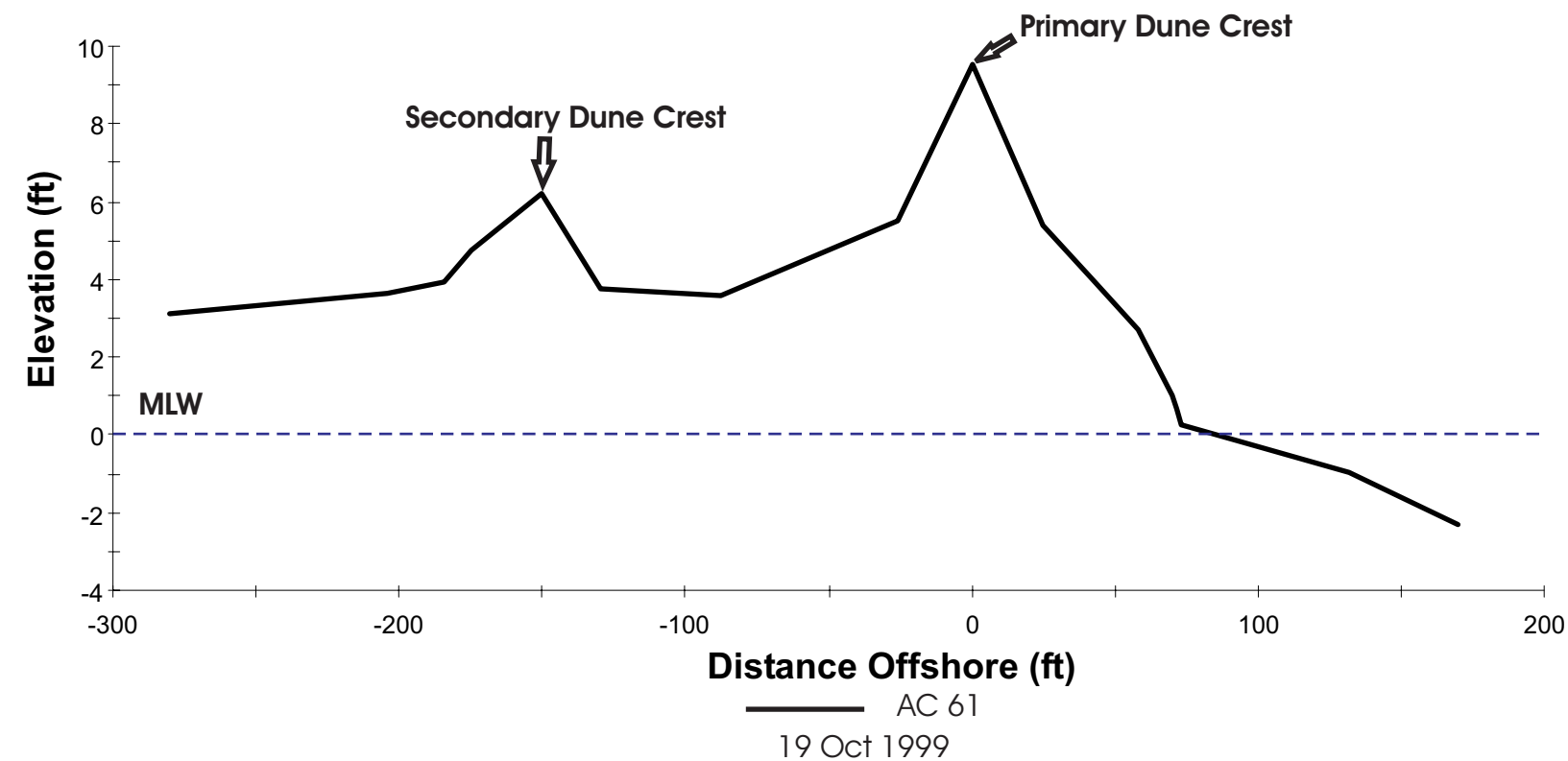
Looking south. Note the exposed peat terrace along the lower beach face.

Site Measurements	
Primary Dune:	
14. Crest Elevation (ft MLW):	6.5
15. Extent from Crest: Landward (ft):	40
16. Extent from Crest: To MLW (ft):	65
Secondary Dune:	None
17. Crest Elevation (ft MLW):	N/A
18. Extent Between Second and Primary Crest (ft):	N/A
19. Second Crest – Landward (ft):	N/A

Vegetation Communities	
20. Primary Dune:	<i>Panicum virgatum</i> (Switch grass) <i>Ammophila breviligulata</i> (American beach grass)
21. Secondary Dune:	N/A

22. Remarks:
AC 59 is a isolated dune bounded by marsh headlands with intermittently exposed peat. A large offshore bar helps maintain the relative stability.

ACCOMACK COUNTY DUNE SITE 61



Site Information

1. Date Surveyed: 19 October 1999
2. Central Coordinates: N: 475,100 ft
E: 2,748,260 ft
3. Central Coordinates: N: 475,100 ft
E: 2,748,260 ft
4. Site Length: 3,780 ft
5. Ownership: Private
- Plate: 13

Site Parameters

6. Type: Natural
7. Fetch Exposure: Open Bay
8. Shoreline Direction of Face: Northwest
9. Nearshore Gradient: 1,000 to 3,000 ft/Extensive Bars
10. Morphologic Setting: Dune Field >500 ft Alongshore/Linear
11. Relative Stability: Stable
12. Underlying Substrate: Marsh
13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
14. Crest Elevation (ft MLW): 9.6
 15. Extent from Crest: Landward (ft): 88
 16. Extent from Crest: To MLW (ft): 86
- Secondary Dune:
17. Crest Elevation (ft MLW): 6.2
 18. Extent Between Second and Primary Crest (ft): 150
 19. Second Crest – Landward (ft): 130

Vegetation Communities

20. Primary Dune:
Ammophila breviligulata (American beach grass)
Panicum virgatum (Switch grass)
21. Secondary Dune:
Ammophila breviligulata (American beach grass)
22. Remarks:
AC 61 is a long dune field toward the south end of Hyslop Marsh. It has developed a secondary dune over time.

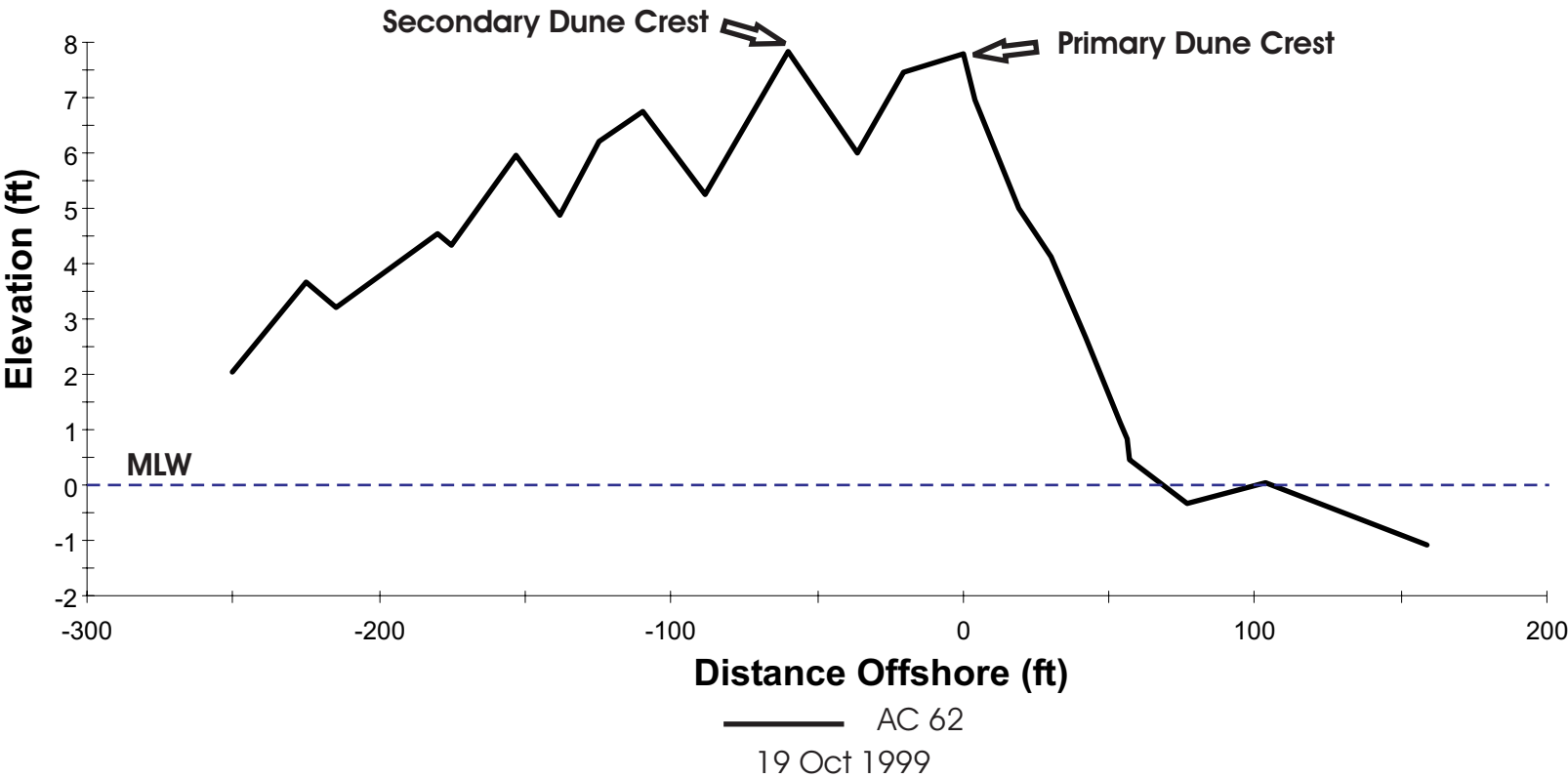


Looking north along the low primary dune.



Looking south along the primary dune.

ACCOMACK COUNTY DUNE SITE 62



Site Information

- 1. Date Surveyed: 19 October 1999
- 2. Central Coordinates: N: 470,760 ft E: 2,746,170 ft
- 3. Central Coordinates: N: 470,760 ft E: 2,746,170 ft
- Virginia South State Plane Grid NAD 1927 [4502]
- 4. Site Length: 1,100 ft
- 5. Ownership: Private Plate: 13

Site Parameters

- 6. Type: Natural
- 7. Fetch Exposure: Open Bay
- 8. Shoreline Direction of Face: Northwest
- 9. Nearshore Gradient: 1,000 to 3,000 ft/Extensive Bars
- 10. Morphologic Setting: Dune Field >500 ft Alongshore/Linear
- 11. Relative Stability: Accretionary
- 12. Underlying Substrate: Marsh
- 13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
 - 14. Crest Elevation (ft MLW): 7.8
 - 15. Extent from Crest: Landward (ft): 36
 - 16. Extent from Crest: To MLW (ft): 68
- Secondary Dune:
 - 17. Crest Elevation (ft MLW): 7.9
 - 18. Extent Between Second and Primary Crest (ft): 60
 - 19. Second Crest – Landward (ft): 190

Vegetation Communities

- 20. Primary Dune:
 - Ammophila breviligulata* (American beach grass)
 - Panicum virgatum* (Switch grass)
- 21. Secondary Dune:
 - Ammophila breviligulata* (American beach grass)
- 22. Remarks:
 - AC 62 is a spit called Sandy Point that has accreted over time leaving a series of low secondary and tertiary dunes.

19 OCT 1999



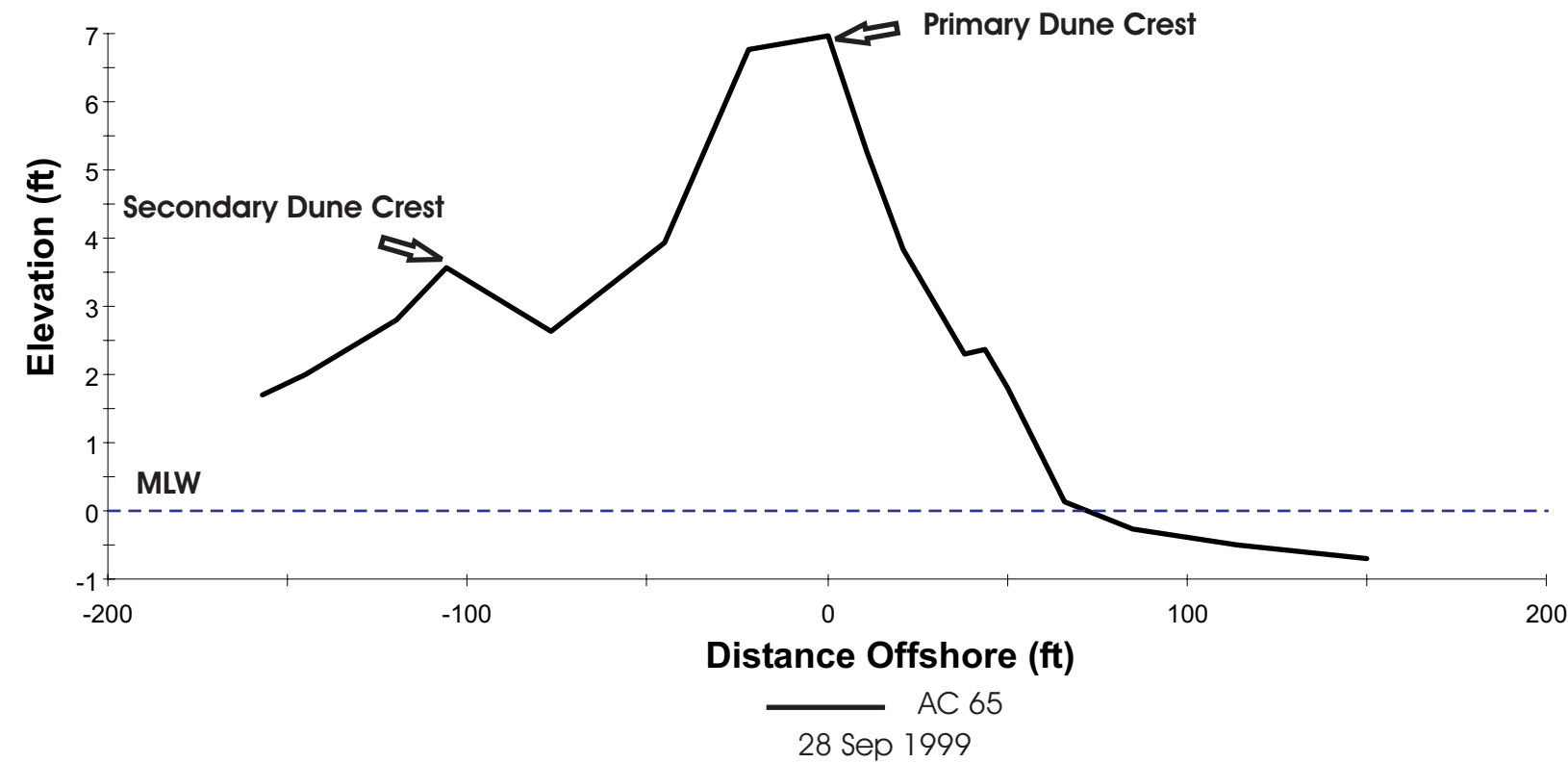
Looking north across the primary and secondary dune field.

19 OCT 1999



Looking south toward the mouth of Back Creek.

ACCOMACK COUNTY DUNE SITE 65



Site Information

- 1. Date Surveyed: 28 September 1999
- 2. Central Coordinates: N: 465,020 ft E: 2,745,890 ft
- 3. Central Coordinates: N: 465,020 ft E: 2,745,890 ft
- Virginia South State Plane Grid NAD 1927 [4502]
- 4. Site Length: 640 ft
- 5. Ownership: Private Plate: 14

Site Parameters

- 6. Type: Natural
- 7. Fetch Exposure: Open Bay
- 8. Shoreline Direction of Face: Northwest
- 9. Nearshore Gradient: >3,000 ft/Extensive Bars
- 10. Morphologic Setting: Creek Mouth Barrier/Spit
- 11. Relative Stability: Land Transgressive/Erosional
- 12. Underlying Substrate: Marsh
- 13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
- 14. Crest Elevation (ft MLW): 7.0
 - 15. Extent from Crest: Landward (ft): 77
 - 16. Extent from Crest: To MLW (ft): 72
- Secondary Dune:
- 17. Crest Elevation (ft MLW): 3.6
 - 18. Extent Between Second and Primary Crest (ft): 106
 - 19. Second Crest – Landward (ft): 39

Vegetation Communities

- 20. Primary Dune: *Panicum amarum* (Running beach grass) *Solidago sempervirens* (Seaside goldenrod) *Ammophila breviligulata* (American beach grass) *Spartina patens* (Saltmeadow hay)
- 21. Secondary Dune: Same as primary dune

- 22. Remarks: AC 65 is a dune field migrating southward by washover into Bull Cove.

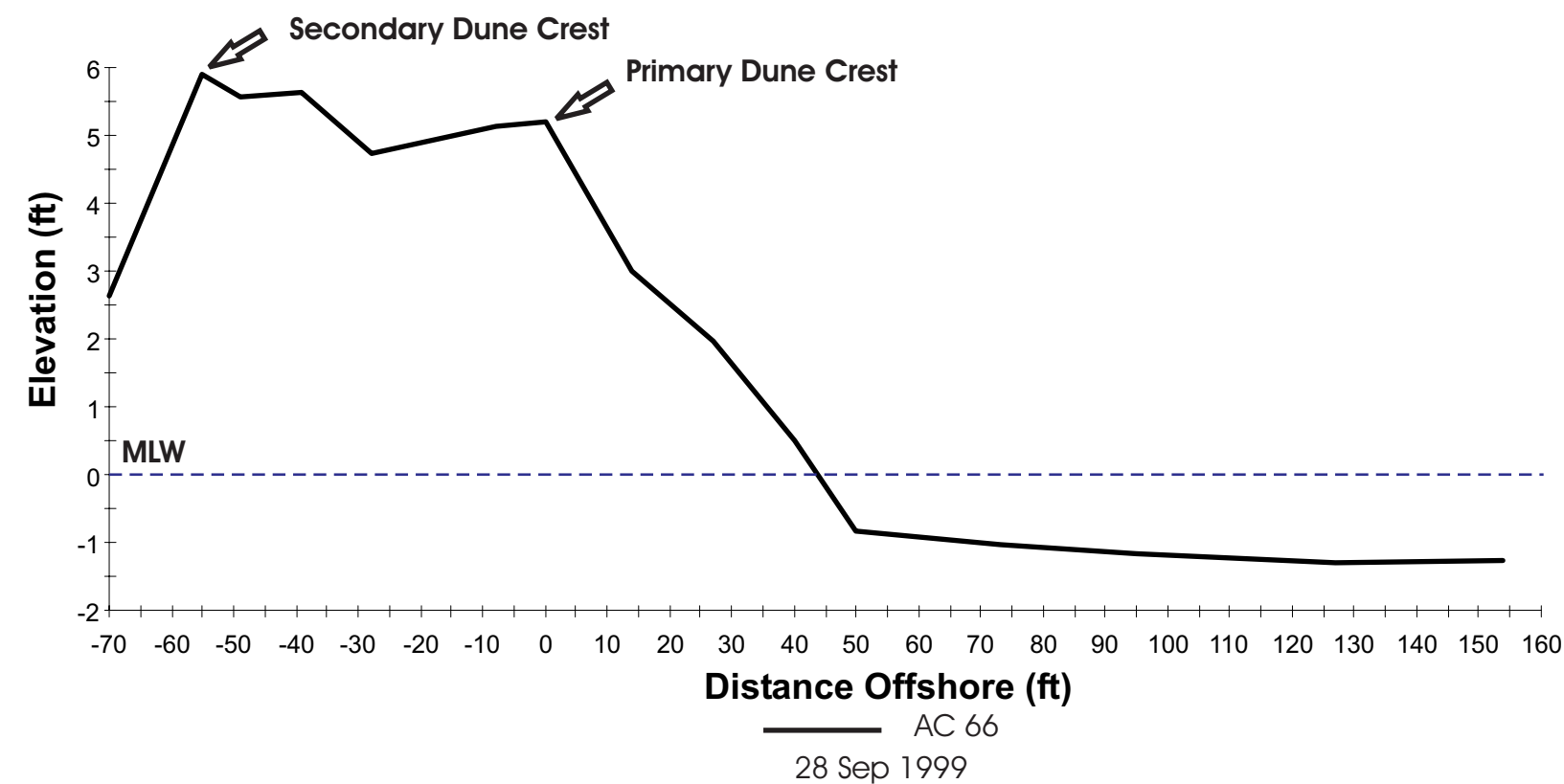


Looking south. Note the washover sands from Hurricane Floyd.



Looking north.

ACCOMACK COUNTY DUNE SITE 66



Site Information

- 1. Date Surveyed: 28 September 1999
- 2. Central Coordinates: N: 464,150 ft E: 2,744,590 ft
- 3. Central Coordinates: N: 464,150 ft E: 2,744,590 ft
- Virginia South State Plane Grid NAD 1927 [4502]
- 4. Site Length: 400 ft
- 5. Ownership: Private Plate: 14

Site Parameters

- 6. Type: Natural
- 7. Fetch Exposure: Open Bay
- 8. Shoreline Direction of Face: Northwest
- 9. Nearshore Gradient: 1,000 to 3,000 ft/Extensive Bars
- 10. Morphologic Setting: Creek Mouth Barrier/Spit
- 11. Relative Stability: Land Transgressive/Erosional
- 12. Underlying Substrate: Marsh
- 13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
 - 14. Crest Elevation (ft MLW): 5.2
 - 15. Extent from Crest: Landward (ft): 28
 - 16. Extent from Crest: To MLW (ft): 44
- Secondary Dune:
 - 17. Crest Elevation (ft MLW): 5.9
 - 18. Extent Between Second and Primary Crest (ft): 55
 - 19. Second Crest – Landward (ft): 15

Vegetation Communities

- 20. Primary Dune:
 - Ammophila breviligulata* (American beach grass)
 - Panicum amarum* (Running beach grass)
- 21. Secondary Dune:
 - Ammophila breviligulata* (American beach grass)
 - Panicum amarum* (Running beach grass)

22. Remarks:
Site AC 66 occurs at the mouth of an unnamed creek that enters Bull Cove. Although erosional at the time of the site visit, it has been stable enough to develop a low secondary dune.

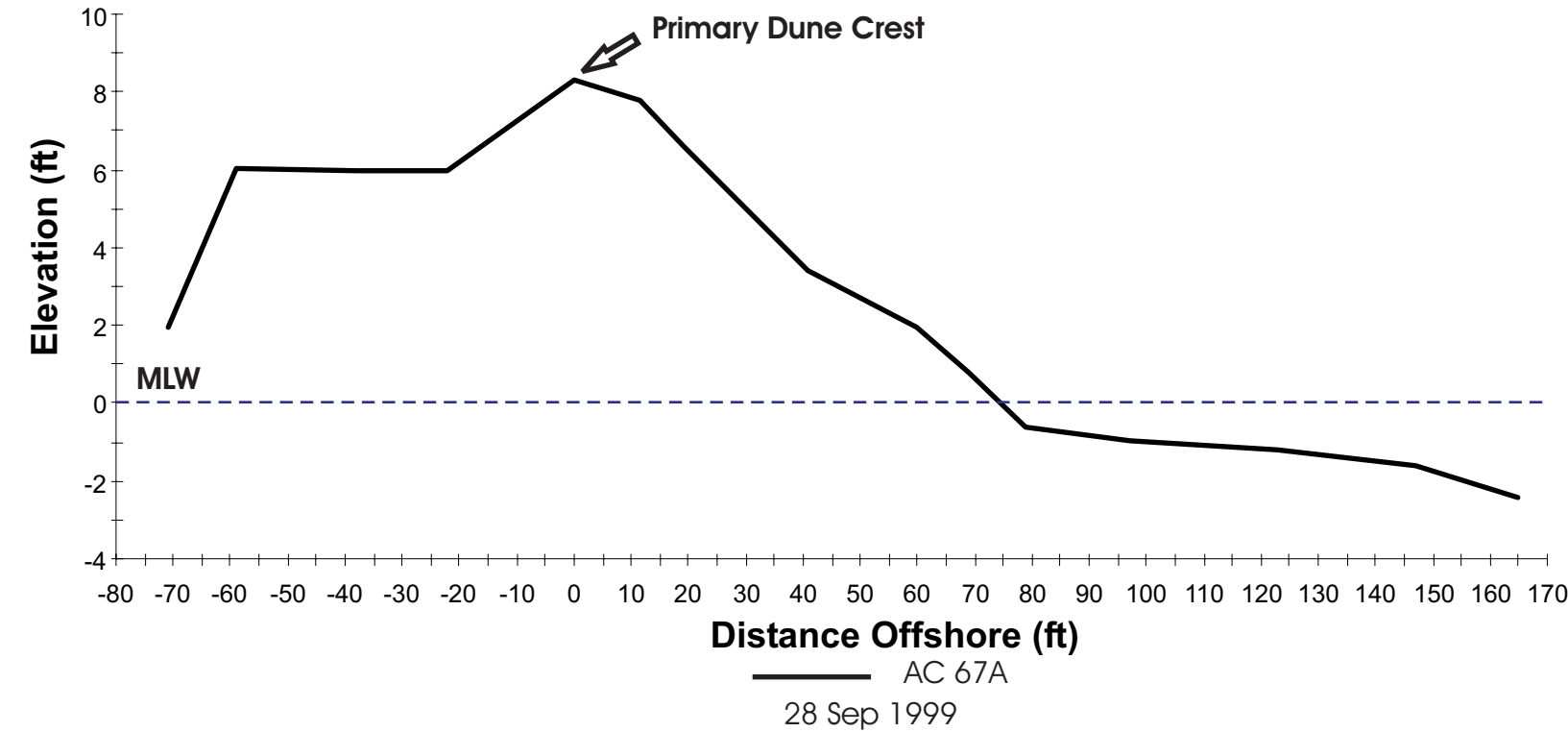


Looking south.



Looking north at the unnamed tidal creek.

ACCOMACK COUNTY DUNE SITE 67A



Site Information

- 1. Date Surveyed: 28 September 1999
- 2. Central Coordinates: N: 461,790 ft
E: 2,742,920 ft
- 3. Central Coordinates: N: 461,790 ft
E: 2,742,920 ft
- Virginia South State Plane Grid NAD 1927 [4502]
- 4. Site Length: 1,650 ft
- 5. Ownership: Private
- Plate: 14

Site Parameters

- 6. Type: Natural
- 7. Fetch Exposure: Open Bay
- 8. Shoreline Direction of Face: West
- 9. Nearshore Gradient: 1,000 to 3,000 ft/Extensive Bars
- 10. Morphologic Setting: Dune Field >500 ft Alongshore/Linear
- 11. Relative Stability: Land Transgressive/Erosional
- 12. Underlying Substrate: Upland
- 13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
 - 14. Crest Elevation (ft MLW): 8.3
 - 15. Extent from Crest: Landward (ft): 38
 - 16. Extent from Crest: To MLW (ft): 75
- Secondary Dune: None
 - 17. Crest Elevation (ft MLW): N/A
 - 18. Extent Between Second and Primary Crest (ft): N/A
 - 19. Second Crest – Landward (ft): N/A

Vegetation Communities

- 20. Primary Dune:
 - Shrub/woody
 - Ammophila breviligulata* (American beach grass)
 - Solidago sempervirens* (Seaside goldenrod)
- 21. Secondary Dune: N/A
- 22. Remarks:

Site 67 is an extensive dune field along the distal end of Scarborough Neck. It has evolved across upland and marsh substrates. Therefore, two subreaches were assessed; AC 67A fronts the upland.

28 SEP 1999



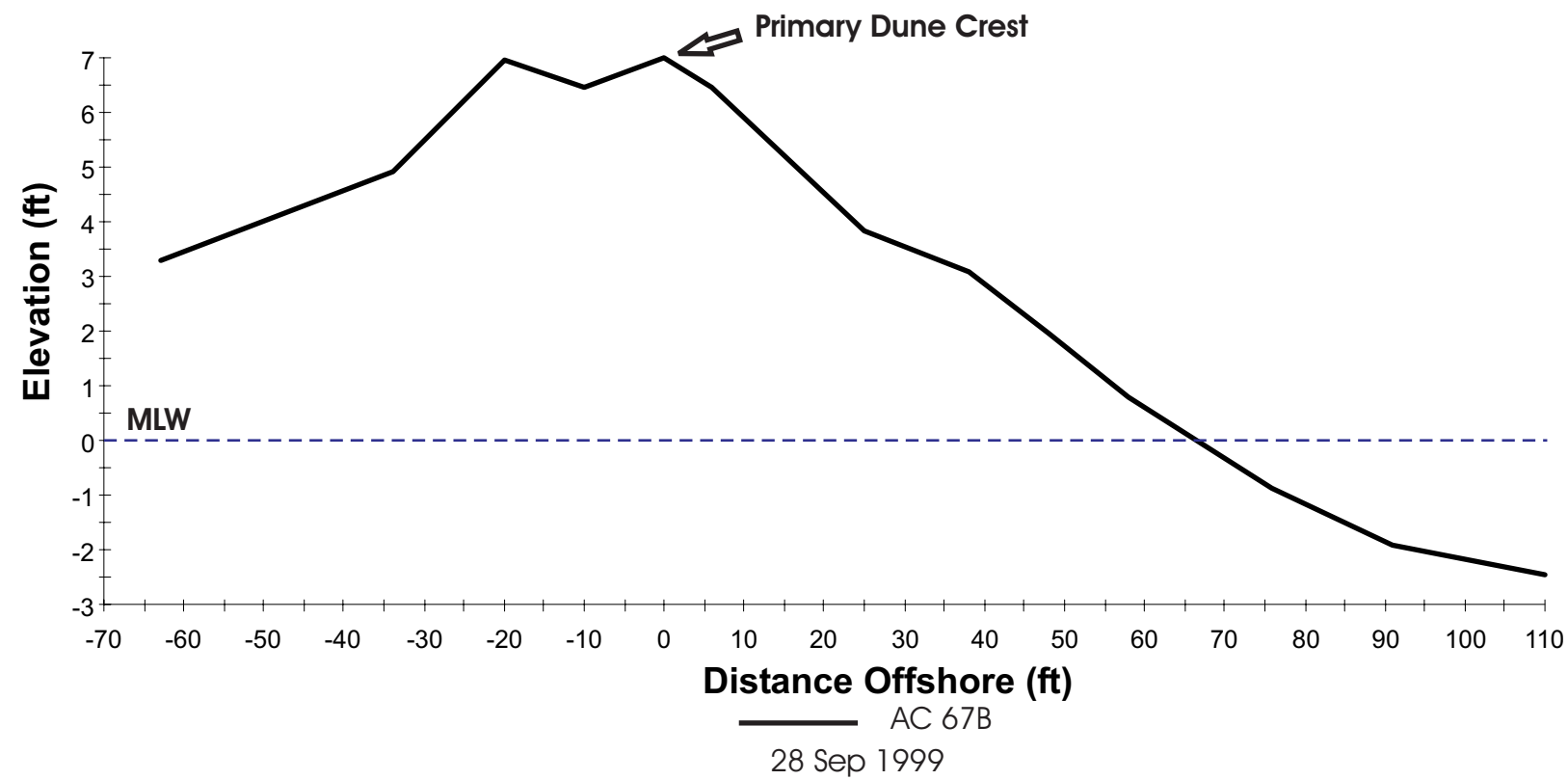
Looking south.

28 SEP 1999



Looking north.

ACCOMACK COUNTY DUNE SITE 67B



Site Information

1. Date Surveyed: 28 September 1999
2. Central Coordinates: N: 460,870 ft
E: 2,742,560 ft
3. Central Coordinates: N: 460,870 ft
E: 2,742,560 ft
Virginia South State Plane Grid NAD 1927 [4502]
4. Site Length: 1,450 ft
5. Ownership: Private Plate: 14

Site Parameters

6. Type: Natural
7. Fetch Exposure: Open Bay
8. Shoreline Direction of Face: West
9. Nearshore Gradient: 1,000 to 3,000 ft/Extensive Bars
10. Morphologic Setting: Dune Field >500 ft Alongshore/Linear
11. Relative Stability: Land Transgressive/Erosional
12. Underlying Substrate: Marsh
13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
14. Crest Elevation (ft MLW): 7.0
15. Extent from Crest: Landward (ft): 69
16. Extent from Crest: To MLW (ft): 67
- Secondary Dune: None
17. Crest Elevation (ft MLW): N/A
18. Extent Between Second and Primary Crest (ft): N/A
19. Second Crest – Landward (ft): N/A

Vegetation Communities

20. Primary Dune:
- Ammophila breviligulata* (American beach grass)
- Spartina patens* (Saltmeadow hay)
- Panicum virgatum* (Switch grass)
21. Secondary Dune: N/A

22. Remarks:
- Site 67 is an extensive dune field along the distal end of Scarborough Neck. It has evolved across upland and marsh substrates. Therefore, two subreaches were assessed; AC 67B fronts the marsh.

28 SEP 1999



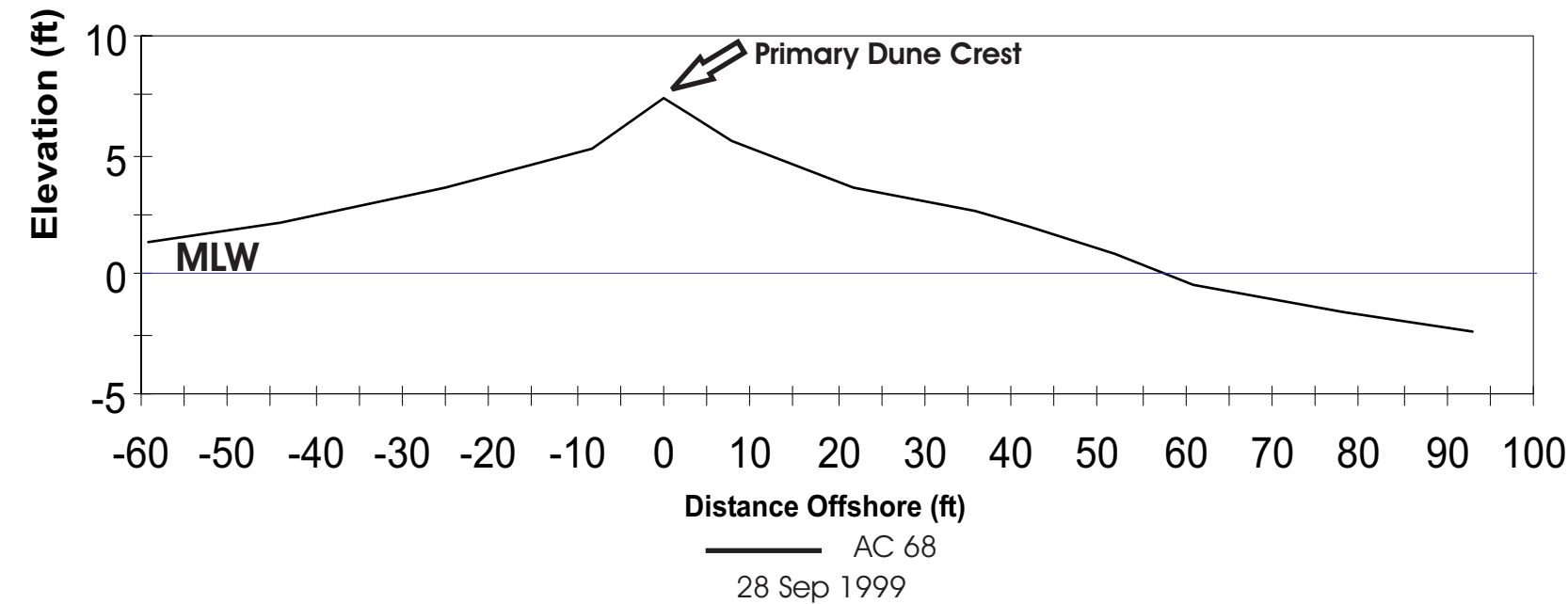
Looking south.

28 SEP 1999



Looking north.

ACCOMACK COUNTY DUNE SITE 68



Site Information

1. Date Surveyed: 28 September 1999
2. Central Coordinates: N: 458,110 ft E: 2,741,650 ft
3. Central Coordinates: N: 458,110 ft E: 2,741,650 ft
- Virginia South State Plane Grid NAD 1927 [4502]
4. Site Length: 630 ft
5. Ownership: Private Plate: 15

Site Parameters

6. Type: Natural
7. Fetch Exposure: Open Bay
8. Shoreline Direction of Face: West
9. Nearshore Gradient: 1,000 to 3,000 ft/Extensive Bars
10. Morphologic Setting: Dune Field >500 ft Alongshore/Linear
11. Relative Stability: Land Transgressive/Erosional
12. Underlying Substrate: Marsh
13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
14. Crest Elevation (ft MLW): 7.5
15. Extent from Crest: Landward (ft): 58
16. Extent from Crest: To MLW (ft): 57
- Secondary Dune: None
17. Crest Elevation (ft MLW): N/A
18. Extent Between Second and Primary Crest (ft): N/A
19. Second Crest – Landward (ft): N/A

Vegetation Communities

20. Primary Dune: *Spartina patens* (Saltmeadow hay)
Panicum virgatum (Switch grass)
Shrub/woody
21. Secondary Dune: N/A
22. Remarks:
AC 68 lies along the southern shoreline of Scarborough Neck. Part of its existence and stability may be related to the close proximity of nearshore sand bars.

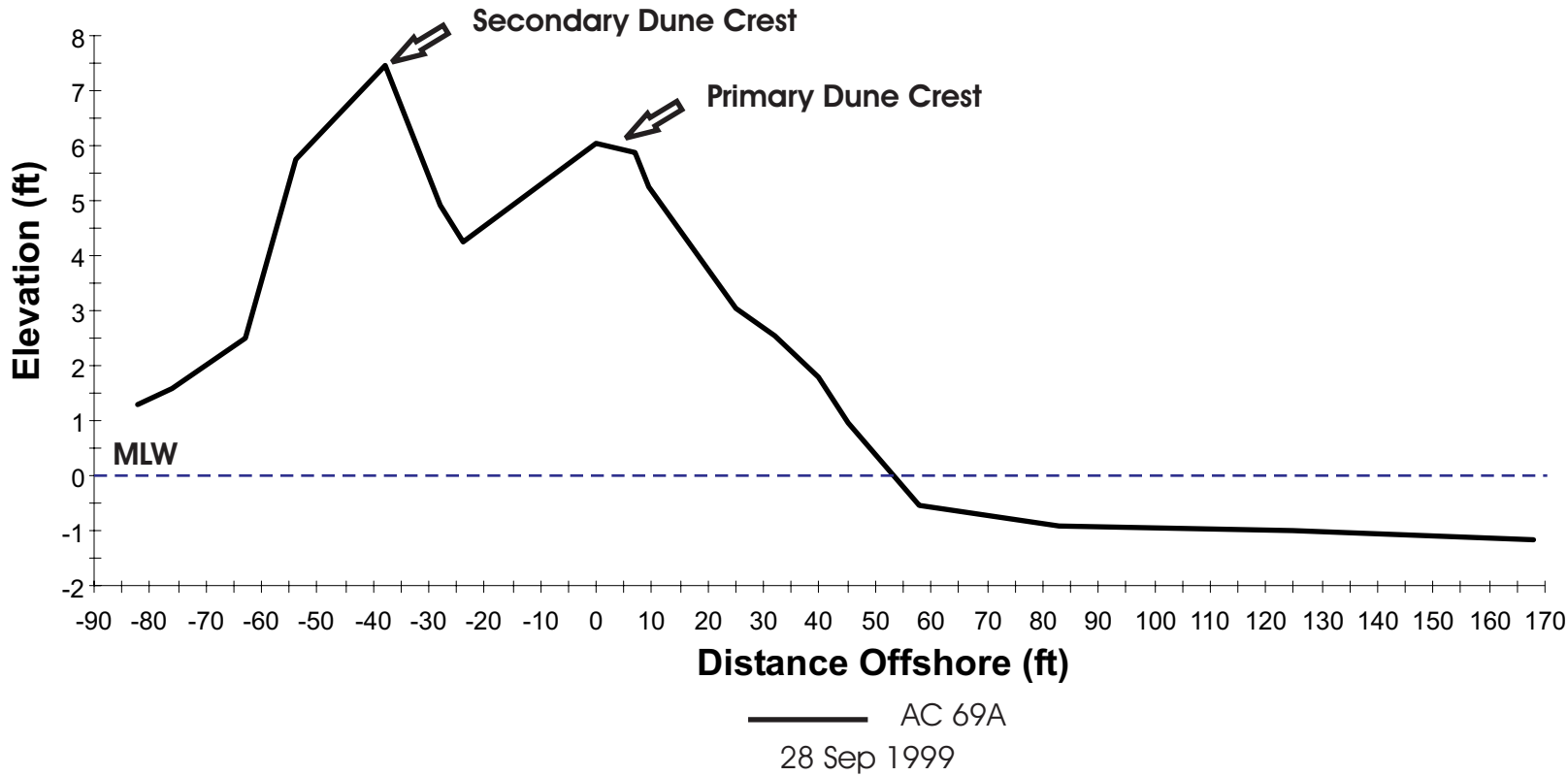


Looking north along the primary dune.



Looking south along the primary dune.

ACCOMACK COUNTY DUNE SITE 69A



Site Information

1. Date Surveyed: 28 September 1999
2. Central Coordinates: N: 455,770 ft
E: 2,742,100 ft
3. Central Coordinates: N: 455,770 ft
E: 2,742,100 ft
4. Site Length: 400 ft
5. Ownership: Private
- Plate:

Site Parameters

6. Type: Natural
7. Fetch Exposure: Open Bay
8. Shoreline Direction of Face: West
9. Nearshore Gradient: >3,000 ft/Extensive Bars
10. Morphologic Setting: Creek Mouth Barrier/Spit
11. Relative Stability: Land Transgressive/Erosional
12. Underlying Substrate: Marsh
13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
14. Crest Elevation (ft MLW): 6.0
 15. Extent from Crest: Landward (ft): 24
 16. Extent from Crest: To MLW (ft): 53
- Secondary Dune:
17. Crest Elevation (ft MLW): 7.4
 18. Extent Between Second and Primary Crest (ft): 38
 19. Second Crest – Landward (ft): 25

Vegetation Communities

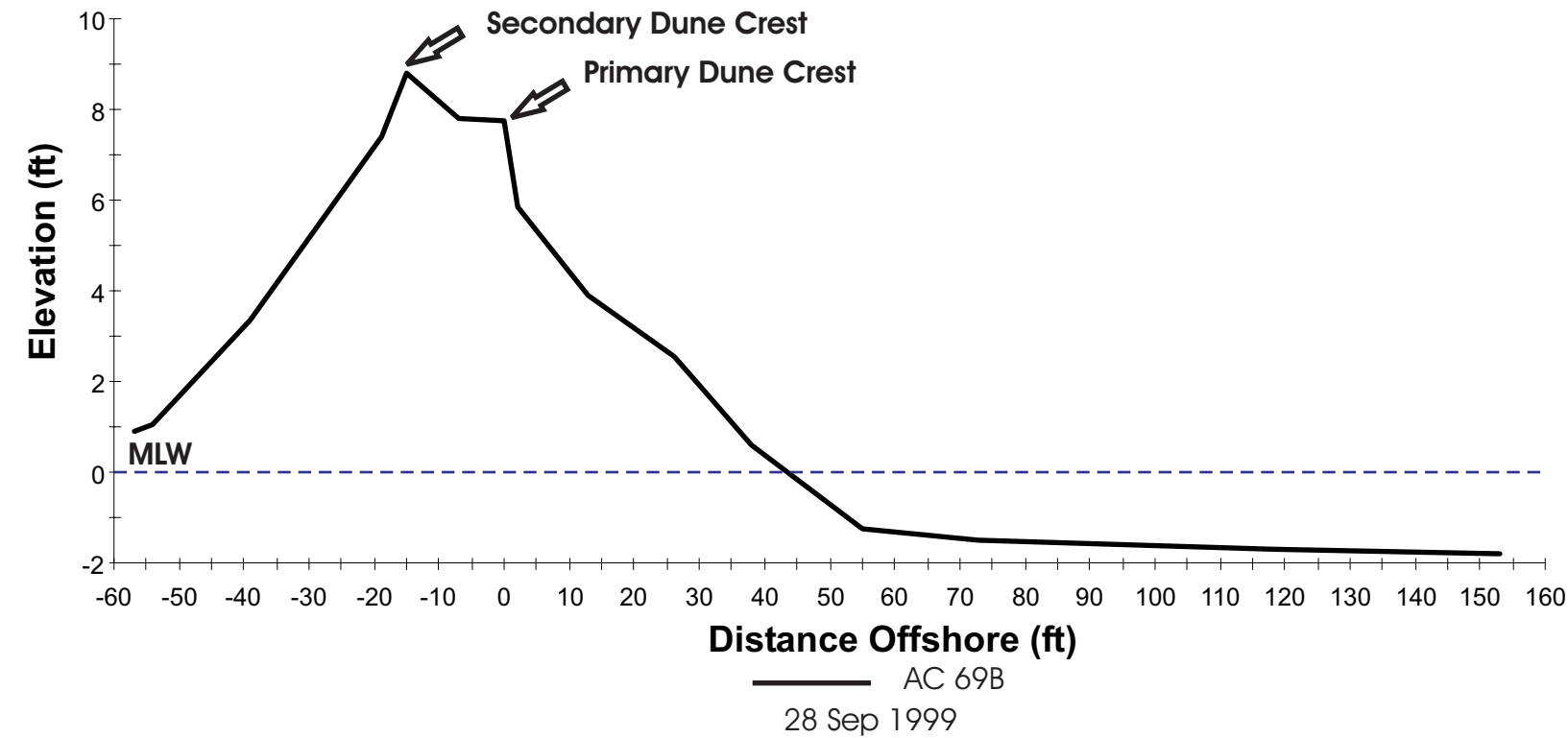
20. Primary Dune: *Solidago sempervirens* (Seaside goldenrod)
Spartina patens (Saltmeadow hay)
Panicum virgatum (Switch grass)
21. Secondary Dune: *Spartina patens* (Saltmeadow hay)
Panicum virgatum (Switch grass)

22. Remarks:
- Site AC 69 has two morphologies. One end has a primary dune; the other end of the site a primary and secondary dune. This is due to the site's orientation to the impinging wind/wave climate and geomorphic setting.



Looking north across washover on the primary dune.

ACCOMACK COUNTY DUNE SITE 69B



Site Information

1. Date Surveyed: 28 September 1999
2. Central Coordinates: N: 455,510 ft
E: 2,742,220 ft
3. Central Coordinates: N: 455,510 ft
E: 2,742,220 ft
4. Site Length: 250 ft
5. Ownership: Private
- Plate: 15

Site Parameters

6. Type: Natural
7. Fetch Exposure: Open Bay
8. Shoreline Direction of Face: West
9. Nearshore Gradient: >3,000 ft/Extensive Bars
10. Morphologic Setting: Isolated <500 ft Alongshore/Shallow Bay
11. Relative Stability: Land Transgressive/Erosional
12. Underlying Substrate: Marsh
13. Structure or Fill: N/A

Site Measurements

- Primary Dune:
14. Crest Elevation (ft MLW): 7.8
 15. Extent from Crest: Landward (ft): 7
 16. Extent from Crest: To MLW (ft): 43
- Secondary Dune:
17. Crest Elevation (ft MLW): 8.8
 18. Extent Between Second and Primary Crest (ft): 15
 19. Second Crest – Landward (ft): 39

Vegetation Communities

20. Primary Dune: *Solidago sempervirens* (Seaside goldenrod)
Spartina patens (Saltmeadow hay)
Panicum virgatum (Switch grass)
21. Secondary Dune: *Spartina patens* (Saltmeadow hay)
Panicum virgatum (Switch grass)
22. Remarks: At AC 69B, the primary dune was severely sheared by Hurricane Floyd in 1999.



Looking south along the primary dune toward Powells Bluff and Occohannock Creek.