Accomack County Dune Inventory

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Accomack County Dune Inventory

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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) 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 tomentosa*); 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*).

The 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.
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 Manmade (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).

Dune Parameter Table

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Natural</th>
<th>Man Influenced</th>
<th>Manmade</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. Nearshore Gradient</td>
<td>Less than 500 ft</td>
<td>1. 0 to 1,000 ft</td>
<td>2. 1,000 to 3,000 ft</td>
<td>3. Greater than 3,000 ft</td>
</tr>
<tr>
<td>D. Morphologic Setting</td>
<td>Isolated (less than 500 ft alongshore)</td>
<td>1. Pocket</td>
<td>2. Linear</td>
<td>3. Shallow Bay (curvilinear)</td>
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<tr>
<td></td>
<td>Creek Mouth Barrier/Spit</td>
<td>1. Pocket</td>
<td>2. Linear</td>
<td>3. Shallow Bay (curvilinear)</td>
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<tr>
<td></td>
<td>Spit</td>
<td>1. Pocket</td>
<td>2. Linear</td>
<td>3. Shallow Bay (curvilinear)</td>
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<tr>
<td></td>
<td>Dune Field (greater than 500 ft alongshore)</td>
<td>1. Pocket</td>
<td>2. Linear</td>
<td>3. Shallow Bay (curvilinear)</td>
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</tbody>
</table>

Figure 3. Classification system for Chesapeake Bay identified dune systems (from Hardaway et al., 2001).
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) 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).
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.

<table>
<thead>
<tr>
<th>Dune Site No.</th>
<th>Location*</th>
<th>Date Visited</th>
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<th>Primary Dune Site?</th>
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*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.

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. Dune lengths were initially utilized to portray a site’s most influential element. In Accomack County, all of the dune sites are natural.
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.

<table>
<thead>
<tr>
<th>Site No.</th>
<th>Dune Site Measurements</th>
<th>Secondary Dunes</th>
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</thead>
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<td>0</td>
<td>2nd Crest Elevation (feet)</td>
<td>2nd Crest seaward to back base (feet)</td>
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<td>7</td>
<td>180 5.9 37 63 N</td>
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<td>26 Natural Open Bay Northwest</td>
</tr>
<tr>
<td>28</td>
<td>850 6.0 62 34 N</td>
<td>27 Natural Open Bay Northwest</td>
</tr>
<tr>
<td>32</td>
<td>250 6.0 1 35 N</td>
<td>28 Natural Open Bay Southwest</td>
</tr>
<tr>
<td>33</td>
<td>150 4.7 23 41 N</td>
<td>32 Natural Open Bay Northwest</td>
</tr>
<tr>
<td>35</td>
<td>400 5.5 13 25 N</td>
<td>33 Natural Open Bay Northwest</td>
</tr>
<tr>
<td>39</td>
<td>210 4.7 24 39 N</td>
<td>35 Natural Open Bay Northwest</td>
</tr>
<tr>
<td>41</td>
<td>1,380 5.8 154 44 86 N</td>
<td>37 Natural Open Bay Northeast</td>
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<td>49</td>
<td>380 5.4 60 59 N</td>
<td>39 Natural Open Bay In Northwest</td>
</tr>
<tr>
<td>50</td>
<td>680 6.0 62 85 N</td>
<td>41 Natural Riv. Bay In Southwest</td>
</tr>
<tr>
<td>51</td>
<td>2,850 6.0 103 72 N</td>
<td>43 Natural Open Bay In Southwest</td>
</tr>
<tr>
<td>57</td>
<td>210 4.7 53 118 N</td>
<td>45 Natural Open Bay In Southwest</td>
</tr>
<tr>
<td>59</td>
<td>270 6.5 40 65 N</td>
<td>47 Natural Open Bay In Southwest</td>
</tr>
<tr>
<td>61</td>
<td>3,780 9.6 86 86 Y</td>
<td>49 Natural Open Bay In North</td>
</tr>
<tr>
<td>62</td>
<td>1,100 7.8 250 90 Y</td>
<td>51 Natural Riv. Bay In North</td>
</tr>
<tr>
<td>65</td>
<td>640 7.0 77 72 Y</td>
<td>53 Natural Open Bay In North</td>
</tr>
<tr>
<td>66</td>
<td>400 5.2 28 44 Y</td>
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</tr>
<tr>
<td>67A</td>
<td>1,550 8.3 38 75 N</td>
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</tr>
<tr>
<td>67B</td>
<td>1,450 7.0 69 67 N</td>
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<td>68</td>
<td>630 7.5 58 57 N</td>
<td>61 Natural Open Bay In North</td>
</tr>
<tr>
<td>69A</td>
<td>400 6.0 24 53 Y</td>
<td>63 Natural Open Bay In North</td>
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<tr>
<td>69B</td>
<td>250 6.0 7 43 Y</td>
<td>65 Natural Open Bay In North</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Site No.</th>
<th>Type</th>
<th>Fetch Exposure</th>
<th>Shoreline Direction of Fave</th>
<th>Nearshore Gradient</th>
<th>Morphologic Setting</th>
<th>Relative Stability</th>
<th>Underlying Substrate</th>
<th>Structure or Fill</th>
</tr>
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<tbody>
<tr>
<td>6</td>
<td>Natural Riv. Bay In South</td>
<td>Medium no bars</td>
<td>Dune Field</td>
<td>Linear</td>
<td>Stable</td>
<td>Marsh</td>
<td></td>
<td></td>
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<tr>
<td>7</td>
<td>Natural Riv. Bay In Southwest</td>
<td>Shallow no bars</td>
<td>Isolated</td>
<td>Shallow Bay</td>
<td>Stable</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Natural Riv. Bay In Southwest</td>
<td>Shallow no bars</td>
<td>Isolated</td>
<td>Shallow Bay</td>
<td>Stable</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Natural Riv. Bay In Southwest</td>
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<td>Shallow Bay</td>
<td>Stable</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Natural Riv. Bay In Southwest</td>
<td>Shallow no bars</td>
<td>Isolated</td>
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<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Natural Open Bay West</td>
<td>Shallow bars</td>
<td>Dune Field</td>
<td>Shallow Bay</td>
<td>Stable</td>
<td>Upland</td>
<td></td>
<td></td>
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<tr>
<td>19</td>
<td>Natural Riv. Bay In South</td>
<td>Medium bars</td>
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<td>Marsh</td>
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<td>20</td>
<td>Natural Open Bay South</td>
<td>Shallow no bars</td>
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<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Natural Open Bay Southwest</td>
<td>Shallow no bars</td>
<td>Dune Field</td>
<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Natural Open Bay Northwest</td>
<td>Medium bars</td>
<td>Isolated</td>
<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Natural Open Bay Northwest</td>
<td>Medium bars</td>
<td>Isolated</td>
<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Natural Open Bay Northwest</td>
<td>Shallow bars</td>
<td>Dune Field</td>
<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Natural Open Bay Southwest</td>
<td>Shallow bars</td>
<td>Dune Field</td>
<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
<td></td>
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<td>Marsh</td>
<td></td>
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<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
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<td>Medium bars</td>
<td>Isolated</td>
<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
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<td>37</td>
<td>Natural Open Bay Northeast</td>
<td>Medium no bars</td>
<td>Split</td>
<td>Linear</td>
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<td>Marsh</td>
<td></td>
<td></td>
</tr>
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<td>39</td>
<td>Natural Open Bay West</td>
<td>Shallow bars</td>
<td>Isolated</td>
<td>Pocket</td>
<td>Eroisonal</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Natural Riv. Bay In Southwest</td>
<td>Shallow no bars</td>
<td>Dune Field</td>
<td>Shallow Bay</td>
<td>Accretional</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>Natural Open Bay In Southwest</td>
<td>Medium bars</td>
<td>Isolated</td>
<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Natural Open Bay In Southwest</td>
<td>Medium bars</td>
<td>Isolated</td>
<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>Natural Open Bay In Southwest</td>
<td>Medium bars</td>
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<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>Natural Open Bay In Southwest</td>
<td>Medium bars</td>
<td>Isolated</td>
<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>Natural Riv. Bay In North</td>
<td>Shallow no bars</td>
<td>Dune Field</td>
<td>Linear</td>
<td>Stable</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>Natural Open Bay In North</td>
<td>Medium bars</td>
<td>Isolated</td>
<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>Natural Open Bay In North</td>
<td>Medium bars</td>
<td>Isolated</td>
<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>Natural Open Bay In North</td>
<td>Medium bars</td>
<td>Dune Field</td>
<td>Linear</td>
<td>Accretional</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>Natural Open Bay In North</td>
<td>Medium bars</td>
<td>Dune Field</td>
<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
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<tr>
<td>61</td>
<td>Natural Open Bay In North</td>
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<td>Dune Field</td>
<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
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<tr>
<td>63</td>
<td>Natural Open Bay In North</td>
<td>Medium bars</td>
<td>Dune Field</td>
<td>Linear</td>
<td>Eroisonal</td>
<td>Marsh</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 AC97 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


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 |
## Appendix B
### Individual Dune Inventory Sheets

<table>
<thead>
<tr>
<th>AC6</th>
<th>AC28</th>
<th>AC59</th>
</tr>
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<tbody>
<tr>
<td>AC7</td>
<td>AC32 &amp; 33</td>
<td>AC61</td>
</tr>
<tr>
<td>AC11 &amp; 13</td>
<td>AC35</td>
<td>AC62</td>
</tr>
<tr>
<td>AC14 &amp; 15</td>
<td>AC37</td>
<td>AC65</td>
</tr>
<tr>
<td>AC 16</td>
<td>AC39</td>
<td>AC66</td>
</tr>
<tr>
<td>AC 17</td>
<td>AC41</td>
<td>AC67a</td>
</tr>
<tr>
<td>AC 18</td>
<td>AC49</td>
<td>AC67b</td>
</tr>
<tr>
<td>AC19 &amp; 20</td>
<td>AC50</td>
<td>AC68</td>
</tr>
<tr>
<td>AC22</td>
<td>AC51</td>
<td>AC69a</td>
</tr>
<tr>
<td>AC25</td>
<td>AC57</td>
<td>AC69b</td>
</tr>
</tbody>
</table>
ACCOMACK COUNTY DUNE SITE 6

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/A E: 581,260 ft E: 2,793,740 ft
4. Site Length: 910 feet
5. Ownership: Private
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
14. Crest Elevation (ft MLW): 5.7
15. Extent from Crest: Landward (ft): 48
16. Extent from Crest: To MLW (ft): 68
17. Crest Elevation (ft MLW): N/A
18. Extent between Second and Primary Crest (ft): N/A
19. Second Crest – Landward (ft): N/A
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: Virginia South State Plane Grid NAD 1927 [4502]
   - N: 578,850 ft
   - E: 2,811,210 ft
3. Profile Coordinates:
   - N: 578,850 ft
   - E: 2,811,210 ft
4. Site Length: 180 ft
5. Ownership: Private

**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

**Remarks:**

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

Not intended for use in determining legal jurisdictional limits.
### ACCOMACK COUNTY DUNE SITE 11

<table>
<thead>
<tr>
<th>Site Information</th>
<th>Site Parameters</th>
<th>Site Measurements</th>
<th>Vegetation Communities</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>N: 559,310 ft</td>
<td>8. Shoreline Direction of Face: Northwest</td>
<td>16. Extent from Crest: To MLW (ft): N/A</td>
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<td></td>
</tr>
<tr>
<td>E: 2,811,330 ft</td>
<td>9. Nearshore Gradient: &gt;3,000 ft/No Bars</td>
<td>Secondary Dune:</td>
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<td></td>
<td></td>
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### ACCOMACK COUNTY DUNE SITE 13

<table>
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<th>Site Information</th>
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<th>Vegetation Communities</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. Date Surveyed: 27 May 2004</td>
<td>6. Type: Natural</td>
<td>14. Crest Elevation (ft MLW): N/A</td>
<td>20. Primary Dune: Spartina patens (Saltmeadow hay)</td>
<td>AC 13 is bounded by two marsh headlands and occurs as a stable embayment that is partially sheltered by Ebb Point.</td>
</tr>
<tr>
<td>N: 563,590 ft</td>
<td>8. Shoreline Direction of Face: Southwest</td>
<td>16. Extent from Crest: To MLW (ft): N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E: 2,807,460 ft</td>
<td>9. Nearshore Gradient: &gt;3,000 ft/No Bars</td>
<td>Secondary Dune:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Not intended for use in determining legal jurisdictional limits.
### 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
3. Profile Coordinates: N: 562,260 ft
4. Site Length: 180 ft
5. Ownership: Private

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

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

---

### 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
3. Profile Coordinates: N: 559,750 ft
4. Site Length: 180 ft
5. Ownership: Private

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

**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.

Not intended for use in determining legal jurisdictional limits.
ACCOMACK COUNTY DUNE SITE 16

Site Information
1. Date Surveyed: 28 Sep 2000
2. Central Coordinates: Virginia South State Plane Grid NAD 1927 [4502]
3. Site Length: 450 ft
4. Ownership: Private

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

Site Measurements
13. Crest Elevation (ft MLW): 5.9
14. Extent from Crest: Landward (ft): 47
15. Extent from Crest: To MLW (ft): 93

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

Vegetation Communities
19. Primary Dune: Spatina patens (Saltmeadow hay)
20. Secondary Dune: N/A

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.

Not intended for use in determining legal jurisdictional limits.
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
   Virginia South State Plane Grid NAD 1927 [4502]
3. Profile Coordinates:
   N: 558,250 ft
   E: 2,805,640 ft
   Not intended for use in determining legal jurisdictional limits.
4. Site Length: 950 ft
5. Ownership: Private

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

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.

Not intended for use in determining legal jurisdictional limits.
ACOMACK COUNTY DUNE SITE 18

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

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.

Not intended for use in determining legal jurisdictional limits.
### 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/A
4. **Site Length:** 200 feet
5. **Ownership:** Private

**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**
14. **Primary Dune:**
   - Crest Elevation (ft MLW): N/A
   - Extent from Crest: Landward (ft): N/A
15. **Secondary Dune:**
   - Crest Elevation (ft MLW): N/A
   - Extent between Second and Primary Crest (ft): N/A
   - 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

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

### 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. **Profile Coordinates:** N/A
4. **Site Length:** 800 ft
5. **Ownership:** Private

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

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

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

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Not intended for use in determining legal jurisdictional limits.
ACCOMACK COUNTY DUNE SITE 22

Date Surveyed: 28 Sep 2000

1. Central Coordinates:
   - N: 548,950 ft
   - E: 2,796,650 ft
   Virginia South State Plane Grid NAD 1927 [4502]

Ownership: Private

Type: Natural

Fetch Exposure: Open Bay

Shoreline Direction of Face: Northwest

Nearshore Gradient: >3,000 ft/No Bars

Morphologic Setting: Dune Field >500 ft Alongshore/Linear

Relative Stability: Land Transgressive/Erosional

Underlying Substrate: Marsh

Structure or Fill: N/A

Remarks: N/A

Primary Dune:
- Crest Elevation (ft MLW): 5.9
- Extent from Crest: Landward (ft): 66
- Extent from Crest: To MLW (ft): 65

Secondary Dune:
- Crest Elevation (ft MLW): N/A
- Extent Between Second and Primary Crest (ft): N/A
- Second Crest – Landward (ft): N/A

Vegetation Communities
- Primary Dune: Ammophila breviligulata (American beach grass)
- Secondary Dune: N/A

Looking east toward the south end of the site.

Looking east toward the north end of the site.

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.

Not intended for use in determining legal jurisdictional limits.
ACCOMACK COUNTY DUNE SITE 25

Field Sketch

AC 25
27 May 2004

Site Information
1. Date Surveyed: 27 May 2004
2. Central Coordinates: N: 546,880 ft E: 2,782,630 ft
3. Virginia South State Plane Grid NAD 1927 [4502]
4. Site Length: 590 ft
5. Ownership: Private
6. 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:
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.

Not intended for use in determining legal jurisdictional limits.
ACCOMACK COUNTY DUNE SITE 27

Site Information
1. Date Surveyed: 28 Sep 2000
2. Central Coordinates: 3. Profile Coordinates:
   N: 541,610 ft  N: 541,610 ft
   E: 2,775,780 ft  E: 2,775,780 ft
   Virginia South State Plane Grid NAD 1927 [4502]
3. Site Length: 970 feet
4. 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
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: 540.460 ft N 2,775.760 ft E
3. Site Length: 850 ft
4. Ownership: Private
5. Plate: B-12

**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**
14. Crest Elevation (ft MLW): 6.0
15. Extent from Crest: Landward (ft): 62
16. Extent from Crest: To MLW (ft): 34
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.

Not intended for use in determining legal jurisdictional limits.
ACCOMACK COUNTY DUNE SITE 32/33

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

Not intended for use in determining legal jurisdictional limits.

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.
ACCOMACK COUNTY DUNE SITE 35

Field Sketch
AC 35
27 May 2004

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

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

Not intended for use in determining legal jurisdictional limits.
ACCOMACK COUNTY DUNE SITE 37

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
4. Site Length: 180 feet
5. Ownership: Private
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
14. Crest Elevation (ft MLW): 4.0
15. Extent from Crest: Landward (ft): 13
16. Extent from Crest: To MLW (ft): 25
17. Crest Elevation (ft MLW): N/A
18. Extent Between Second and Primary Crest (ft): N/A
19. Second Crest – Landward (ft): N/A
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.

Not intended for use in determining legal jurisdictional limits.
ACOMACK COUNTY DUNE SITE 39

Site Information
1. Date Surveyed: 28 Sep 2000
2. Central Coordinates: 3. Central Coordinates:
   N: 519,540 ft E: 2,771,540 ft
   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: Open Bay/Pocket
11. Relative Stability: Land Transgressive/Erosional
12. Underlying Substrate: Marsh
13. Structure or Fill: N/A

Site Measurements
Primary Dune:
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.

Not intended for use in determining legal jurisdictional limits.
ACCOMACK COUNTY DUNE SITE 41

28 Sep 2000

Natural Riverine, Bay Influenced Southeast Dune Field >500 ft Alongshore/Shallow Bay Accretionary Marsh

<table>
<thead>
<tr>
<th>Plate:</th>
<th>10</th>
</tr>
</thead>
</table>

Site Information

1. **Date Surveyed:** 28 Sep 2000
2. **Central Coordinates:** N: 518,220 ft E: 2,772,510 ft
   - Virginia South State Plane Grid NAD 1927 [4502]
3. **Ownership:** Private
4. **Site Length:** 1,380 ft
5. **Type:** Natural
6. **Fetch Exposure:** Riverine, Bay Influenced
7. **Shoreline Direction of Face:** Southeast
8. **Nearshore Gradient:** 0 to 1,000 ft/No Bars
9. **Morphologic Setting:** Dune Field >500 ft Alongshore/Shallow Bay
10. **Relative Stability:** Accretionary
11. **Underlying Substrate:** Marsh
12. **Structure or Fill:** N/A

Site Parameters

13. **Primary Dune Crest:**
   - N: 518,220 ft E: 2,772,510 ft

Site Measurements

<table>
<thead>
<tr>
<th>Primary Dune:</th>
<th>Secondary Dune:</th>
</tr>
</thead>
</table>

Vegetation Communities

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

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

Not intended for use in determining legal jurisdictional limits.
ACCOMACK COUNTY DUNE SITE 49

Date Surveyed: 19 October 1999

Central Coordinates:
- N: 496,050 ft
- E: 2,761,230 ft
Virginia South State Plane Grid NAD 1927 [4502]

Ownership: Private

Site Measurements

Primary Dune:
- Crest Elevation (ft MLW): 5.4
- Extent from Crest: Landward (ft): 40
- Extent from Crest: To MLW (ft): 59

Secondary Dune:
- Crest Elevation (ft MLW): N/A
- Extent Between Second and Primary Crest (ft): N/A
- Second Crest – Landward (ft): N/A

Vegetation Communities

Primary Dune:
- Spartina patens (Saltmeadow hay)

Secondary Dune:
- N/A

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

Looking north toward Blunt Point.
Not intended for use in determining legal jurisdictional limits.

Looking south. Note the washovers from Hurricane Floyd.

Not intended for use in determining legal jurisdictional limits.
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
   Virginia South State Plane Grid NAD 1927 [4502]
3. Central Coordinates: N: 493,420 ft E: 2,758,890 ft
4. Site Length: 680 ft
5. Ownership: Private
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**
14. Crest Elevation (ft MLW): 6.0
15. Extent from Crest: Landward (ft): 62
16. Extent from Crest: To MLW (ft): 85
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. Its position may be controlled, in part, by a large offshore sand bar.

---

Not intended for use in determining legal jurisdictional limits.
ACCOMACK COUNTY DUNE SITE 51

19 OCT 1999

Looking west. Note the washover from Hurricane Floyd.

19 OCT 1999

Looking east.

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

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

Site Measurements
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:
Ammophila breviligulata (American beach grass)
Panicum virgatum (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.

Not intended for use in determining legal jurisdictional limits.
ACCOMACK COUNTY DUNE SITE 57

Site Information
1. Date Surveyed: 19 October 1999
2. Central Coordinates: Virginia South State Plane Grid NAD 1927 [4502]
   N: 480,940 ft
   E: 2,751,120 ft
3. Central Coordinates: Virginia South State Plane Grid NAD 1927 [4502]
   N: 480,940 ft
   E: 2,751,120 ft
4. Site Length: 270 ft
5. Ownership: Private
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 Parameters
15. Extent from Crest: Landward (ft): 53
16. Extent from Crest: To MLW (ft): 118
17. Crest Elevation (ft MLW): N/A
18. Extent Between Second and Primary Crest (ft): N/A
19. Second Crest – Landward (ft): N/A
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.

Not intended for use in determining legal jurisdictional limits.
ACCOMACK COUNTY DUNE SITE 59

Site Information
1. Date Surveyed: 19 October 1999
2. Central Coordinates:  N: 479,700 ft  E: 2,750,180 ft
   Virginia South State Plane Grid NAD 1927 [4502]
3. Ownership: Private
4. Site Length: 270 ft
5. Type: Natural
6. Fetch Exposure: Open Bay
7. Shoreline Direction of Face: Northwest
8. Nearshore Gradient: 1,000 to 3,000 ft/Extensive Bars
9. Morphologic Setting: Isolated <500 ft Alongshore/Linear
10. Relative Stability: Stable
11. Underlying Substrate: Marsh
12. Structure or Fill: N/A
13. Plate: B-22

Site Parameters
15. Extent from Crest: Landward (ft): 40
16. Extent from Crest: To MLW (ft): 65
17. Crest Elevation (ft MLW): N/A
18. Extent Between Second and Primary Crest (ft): N/A
19. Second Crest – Landward (ft): N/A
20. Primary Dune: Panicum virgatum (Switch grass)
   Ammophila breviligulata (American beach grass)
21. Secondary Dune: N/A
22. Remarks: AC 59 is an isolated dune bounded by marsh headlands with intermittently exposed peat. A large offshore bar helps maintain the relative stability.

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

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

Not intended for use in determining legal jurisdictional limits.
ACCOMACK COUNTY DUNE SITE 61

19 October 1999

Primary Dune Crest

Secondary Dune Crest

AC 61
19 Oct 1999

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

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): 110

Vegetation Communities
20. Primary Dune:
Ammophila breviligulata (American beach grass)
Panicum virgatum (Switch grass)
21. Secondary Dune:
Ammophila breviligulata (American beach grass)

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. **Type:** Natural
4. **Fetch Exposure:** Open Bay
5. **Site Length:** 1,100 ft
6. **Site Parameters:**
   - **Shoreline Direction of Face:** Northwest
   - **Type:** Accretionary
   - **Relative Stability:** N/A
   - **Underlying Substrate:** Marsh
7. **Ownership:** Private
8. **Site Measurements:**
   - **Primary Dune:**
     - **Crest Elevation (ft MLW):** 7.8
     - **Extent from Crest: Landward (ft):** 36
     - **Extent from Crest: To MLW (ft):** 68
   - **Secondary Dune:**
     - **Crest Elevation (ft MLW):** 7.9
     - **Extent Between Second and Primary Crest (ft):** 60
     - **Second Crest – Landward (ft):** 190

**Vegetation Communities**

- Primary Dune:
  - *Ammophila breviligulata* (American beach grass)
  - *Panicum virgatum* (Switch grass)
- Secondary Dune:
  - *Ammophila breviligulata* (American beach grass)

**Remarks:**

AC 62 is a spit called Sandy Point that has accreted over time leaving a series of low secondary and tertiary dunes.
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
4. Site Length: 640 ft
5. Ownership: Private

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): 14
16. Extent from Crest: To MLW (ft): 77
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.

Not intended for use in determining legal jurisdictional limits.
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

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.

Not intended for use in determining legal jurisdictional limits.
Site Information
1. Date Surveyed: 28 September 1999
2. Central Coordinates: 461,790 ft N 2,742,920 ft E Virginia South State Plane Grid NAD 1927 [4502]
3. Central Coordinates: 461,790 ft N 2,742,920 ft E Virginia South State Plane Grid NAD 1927 [4502]
4. Site Length: 1,650 ft
5. Ownership: Private
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
14. Crest Elevation (ft MLW): 8.3
15. Extent from Crest: Landward (ft): 38
16. Extent from Crest: To MLW (ft): 75
17. Crest Elevation (ft MLW): N/A
18. Extent Between Second and Primary Crest (ft): N/A
19. Second Crest – Landward (ft): N/A
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.

Looking south.

Looking north.

Not intended for use in determining legal jurisdictional limits.
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
   Virginia South State Plane Grid NAD 1927 [4502]
3. Central Coordinates:
   - N: 460,870 ft
   - E: 2,742,560 ft
4. Site Length: 1,450 ft
5. Ownership: Private
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 Parameters
14. Crest Elevation (ft MLW): 7.0
15. Extent from Crest: Landward (ft): 69
16. Extent from Crest: To MLW (ft): 67
17. Crest Elevation (ft MLW): N/A
18. Extent Between Second and Primary Crest (ft): N/A
19. Second Crest – Landward (ft): N/A

Site Measurements

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

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.
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
4. Site Length: 630 ft
5. Ownership: Private
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
15. Extent from Crest: Landward (ft): 58
16. Extent from Crest: To MLW (ft): 57
17. Crest Elevation (ft MLW): N/A
18. Extent Between Second and Primary Crest (ft): N/A
19. Second Crest – Landward (ft): N/A
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.

Not intended for use in determining legal jurisdictional limits.
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

Virginia South State Plane Grid NAD 1927 [4502]

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: West Creek Mouth Barrier/Spit
11. Relative Stability: Land Transgressive/Erosional
12. Underlying Substrate: Marsh
13. Structure or Fill: N/A

Site Measurements
14. Crest Elevation (ft MLW): 6.0
15. Extent from Crest: Landward (ft): 24
16. Extent from Crest: To MLW (ft): 53
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: Soliago 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.

Not intended for use in determining legal jurisdictional limits.
ACCOMACK COUNTY DUNE SITE 69B

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

Not intended for use in determining legal jurisdictional limits.