

## Chapter 6.5

### Status of shoreline in the Maryland Coastal Bays

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#### Abstract

Natural shoreline habitat loss is prevalent in the Coastal Bays. Natural shoreline is important habitat for fish, shellfish, horseshoe crabs, and birds. The northernmost Coastal Bays (Assawoman Bay, Isle of Wight Bay, and the St. Martin River) have the greatest percentages of disturbed shoreline, ranging from 21 to 44 percent. Little shoreline disturbance has occurred in the three southernmost bays (Sinepuxent Bay, Newport Bay, and Chincoteague Bay). The percentage of hardened shoreline may be greater, particularly in the northern bays, due to shortcomings in shoreline classification and aerial photography. A more precise and current shoreline inventory is currently in development.

#### Data Analyses

The Maryland Geological Survey (MGS) has recently acquired a digital set of historical shorelines for the coastal regions of Maryland. For the Coastal Bays, the most recent of these shorelines was interpreted from digital orthophotography flown on April 12, 1989. Shoreline segments were classified by the following four shoreline types: beach, (manmade) structure, vegetated, or water's edge. The last was a catchall category, applied when none of the others was clearly discernible (Hennessee 2001).

For purposes of this report, "disturbed shoreline" is considered the equivalent of "structure." The other three shoreline types are considered "natural shoreline." "Structure" includes only hardened shorelines – bulkheads, revetments, etc. In the orthophotographs, these appear as comparatively straight stretches of shoreline flanked by convoluted reaches typical of natural shorelines. Shoreline intentionally protected by non-structural erosion control techniques, like vegetative buffers, was classified as one of the other types.

***Draft Shoreline Indicator:*** Percent natural shoreline

#### Results

##### Status of Natural Shoreline Habitat

The total shoreline miles bordering each of the Coastal Bays and the percentage of each shoreline type are shown in Table 6.5.1 (Hennessee and Stot 1999; Hennessee et. al. 2002). Figure 6.5.1 shows the same information graphically.

**Table 6.5.1:** Percent area classified as natural shoreline in each bay segment.

<b>Bay Segment</b>	<b>% natural shoreline</b>
Assawoman Bay	79
St. Martin River	77
Isle of Wight	56
Sinepuxent	94
Newport	100
Chincoteague	99

### Summary

In 1989, the northernmost Coastal Bays, Assawoman Bay, Isle of Wight Bay, and the St. Martin River, had the greatest percentage of protected/disturbed shoreline, ranging from 21 to 44 percent. Little or no shoreline in the three southernmost bays, Sinepuxent Bay, Newport Bay, and Chincoteague Bay, was protected or disturbed at that time. Depending on the actual nature of the shoreline classified as “water’s edge,” the percentage of protected shoreline may be greater, particularly in the northern bays. Based on comments from several data set users who were familiar with local shoreline conditions, photo interpretation of shoreline type generally underestimated the length of hardened shoreline. In addition, the photos used were almost 15 years old and much shoreline hardening has occurred since then hence, the actual current length of hardened shoreline is believed to be greater than reported here.

Through a grant from Maryland’s Coastal Zone Management Program (CZM), the Virginia Institute of Marine Science (VIMS) is in the process of generating a shoreline inventory of coastal localities in Maryland. The assessment is based on a division of the shore zone into three regions: the immediate riparian zone, the bank, and the shoreline. Characteristics of the three zones are observed from a small boat navigating along the shoreline and logged using hand-held GPS units. In the immediate riparian zone, land use adjacent to the bank is classified as one of eleven categories (forest, scrub-shrub, grass, agriculture, residential, commercial, industrial, bare, timbered, paved, or unknown). Banks are evaluated for height, stability, cover, and natural protection. Along the shoreline, VIMS notes the presence of shore protection and recreational structures (VIMS, 2004). VIMS’ reports, maps, and data sets are available digitally (VIMS 2004).

To date, VIMS has completed inventories for Dorchester and St. Mary’s Counties. CZM expects an inventory for Worcester County to be completed by Winter 2005 (Luscher 2004) Thereafter, CZM intends to update the survey by using aerial photography and developing a tracking database for permits issued for construction along the shore.

## **References**

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Hennessee, L., and J. Stott. 1999, Shoreline changes and erosion rates for the northern Coastal Bays of Maryland: Baltimore, Md., Maryland Geological Survey File Report No. 99-7, 30 p.

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Virginia Institute of Marine Science (VIMS). 2004. Shoreline Situation Reports (MD). Website: [ccrm.vims.edu/gis/gisdata.html](http://ccrm.vims.edu/gis/gisdata.html), March 26, 2004.

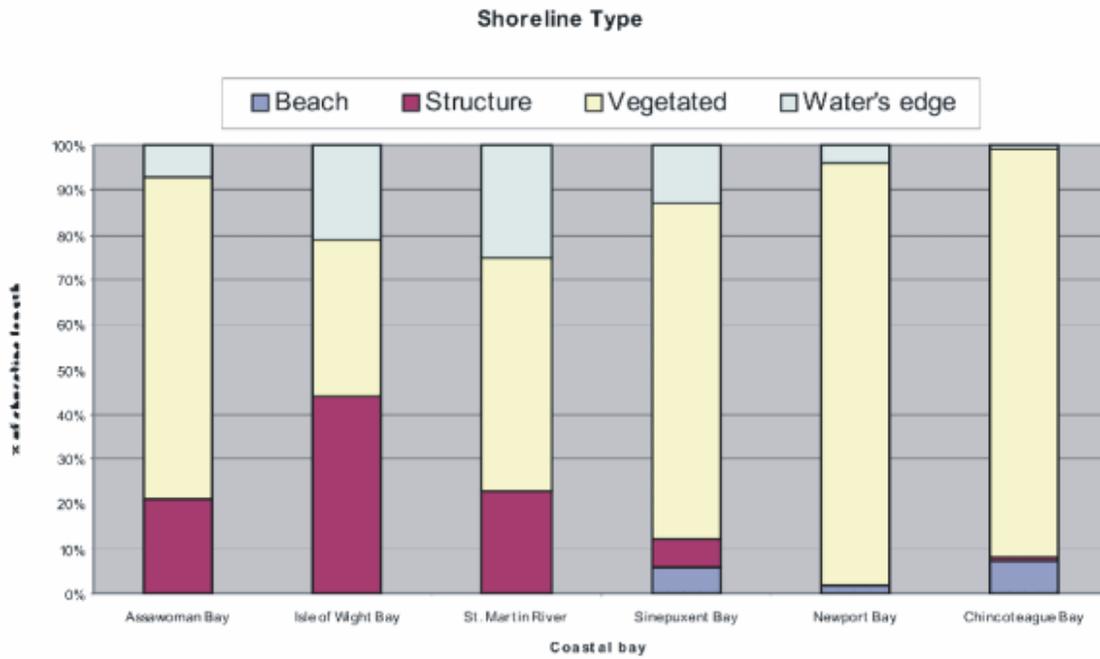


Figure 6.5.1: Total shoreline miles and percentage of each shoreline type per Coastal Bays segment. Based on DNR survey in 1989.