WETLANDS

Are important to you!

Do you know why?

Do you like to eat seafood , like yummy flounder and crabs?
They provide a food source.

Do you enjoy watching shore birds?

Wetlands provide habitat

How about boating, fishing, kayaking? Wetlands help provide clean water for these activities.

Make clean water available for us and our future generations

Is cleaner water for the Chesapeake Bay important to you? Wetlands play a large role in each of these activities. Wetlands have scientific, historical, cultural and recreational values. In the United States more than one-third of threatened and endangered species live only in the wetlands and nearly half of these species use wetlands at some point in their lives. Many other animals and plants depend on wetlands for survival. As society has become more conscious of protecting our environment, they are realizing that wetlands are an integral part of that role.

Laws Protecting Wetlands

Governmental entities have also realized the importance of wetlands. Federally, there are three main laws enacted by Congress to protect wetlands. Section 404 is commonly named "The Clean Water Act".

- Federal Laws:
- . 2 YSC 4321 National Environmental Policy Act of 1969
- . 33 USC 1344/40CFR230_Section 404
- . 16 USC 1452 Coastal Zone Management Act

Growing public awareness and concern for Virginia's tidal resources encouraged the General Assembly to enact laws to protect and preserve this valuable Commonwealth resource. The State's legislative mission is reflected in these laws. They are the Wetlands Act and the Coastal Primary Sand Dunes and Beaches Act.

- State Laws:
- . § 28.2-1300 Wetlands Act
- . § 28.1-1400 Coastal Primary Sand Dunes and Beaches Act

In 1972 each local government within the Commonwealth was given the opportunity to adopt the Wetlands Act. In order to provide the County a voice in directly protecting Mathews wetlands, Mathews County Board of Supervisors adopted a Wetlands Ordinance (Chapter 16) and appointed members to form the Mathews County Wetlands Zoning Board. The Board consists of five members with each member appointed for a five-year term. In 1980 an added task was given the Wetlands Board. They were charged with the responsibility of protecting beaches and dunes with the enactment of the Coastal Primary Sand Dunes and Beaches Ordinance. The Board meets the first Wednesday of each month (unless that date conflicts with a holiday) in the historic courthouse located at 27 Court Street in Mathews at 7:00 p.m.

- Local Laws:
- . Chapter 166, Wetlands Ordinance
- . Chapter 122, Coastal Primary Sand Dunes and Beaches Act

- Associated State Laws:
- . § 28.2-1205 Subaqueous Lands Act
- . § 10.1-2100 Chesapeake Bay Preservation Act

What are tidal wetlands?

Tidal Wetlands are divided into two categories:

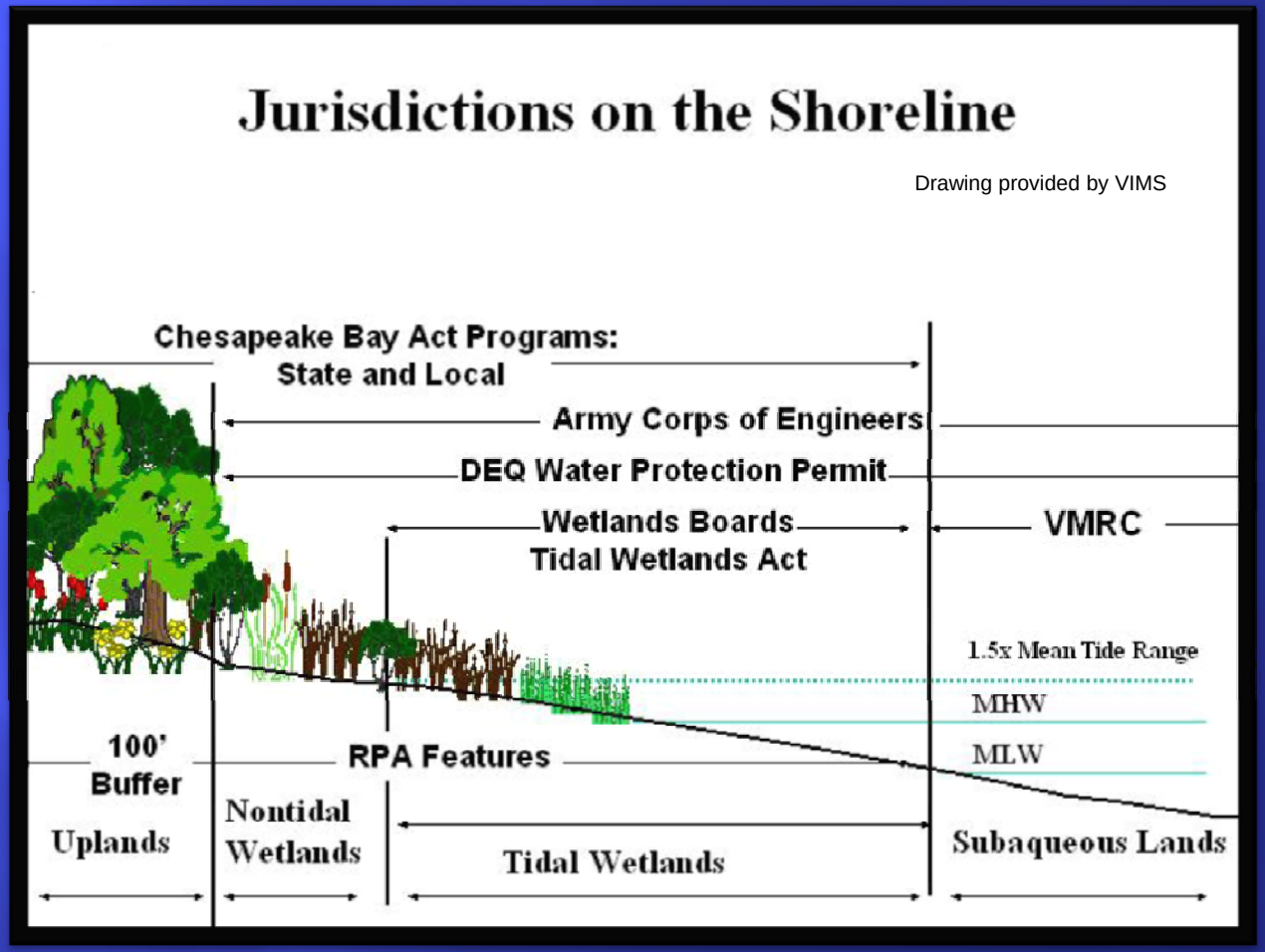
- Non-vegetated
- Vegetated

The law defines tidal wetlands as follows:

Non-vegetated wetlands means unvegetated lands lying contiguous to mean low water and between mean low water and mean high water.

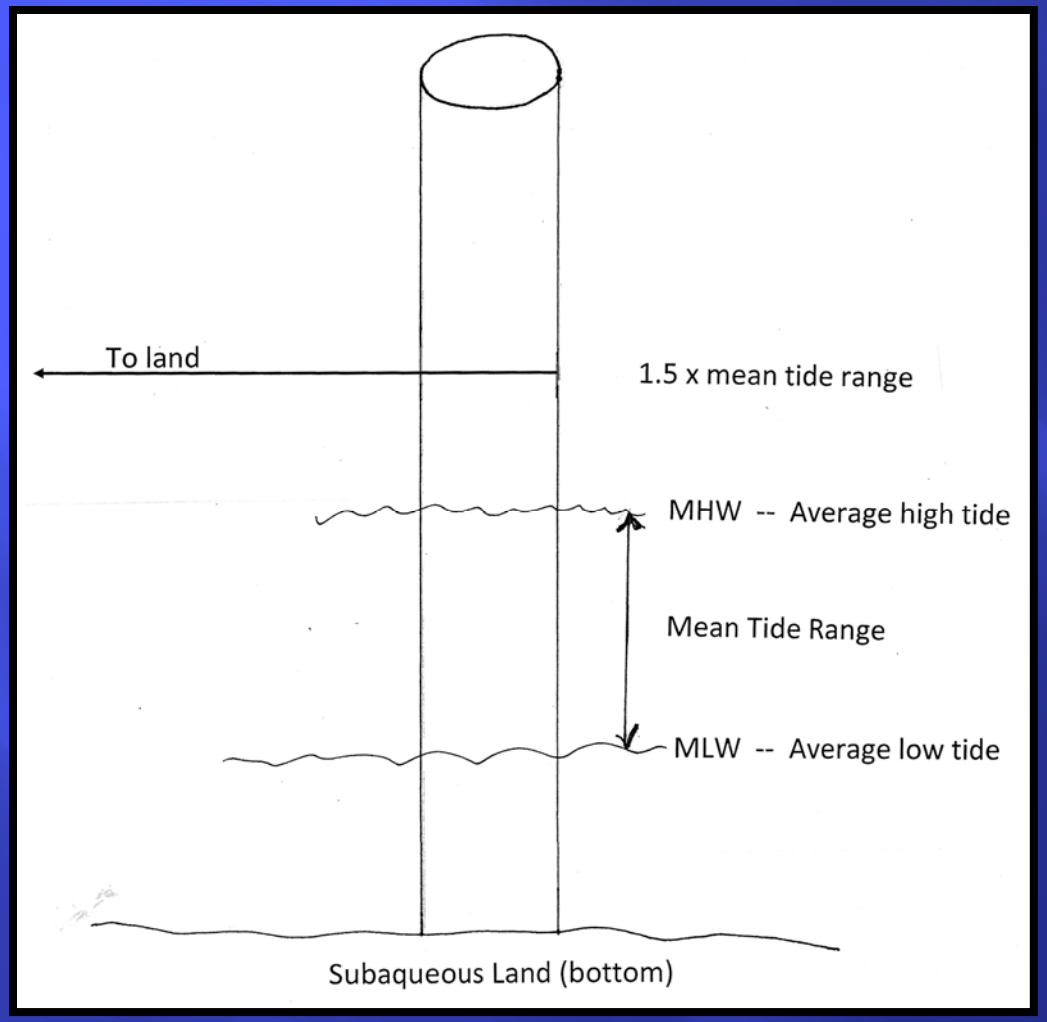
Vegetated wetlands means lands lying between and contiguous to mean low water and an elevation above mean low water equal to the factor one and one-half times the mean tide range at the site of the proposed project in the county, city, or town in question, and upon which is growing specific species of plants.

Jurisdictions of Vegetated Wetlands, and Non-vegetated Wetlands



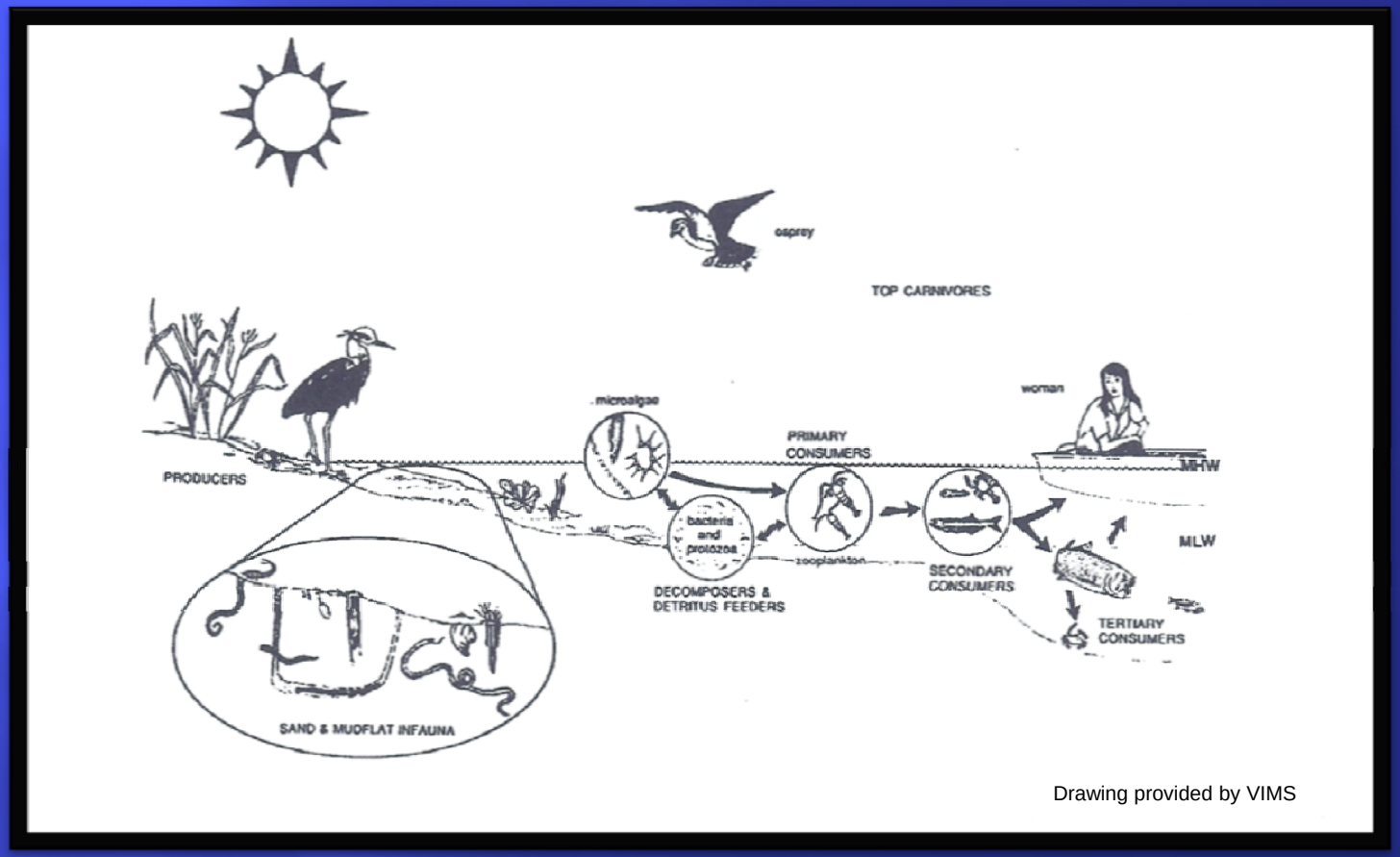
This chart shows how to determine the location of vegetated and non-vegetated wetlands as well as the Board's jurisdiction as it pertains to the shoreline. The actual square footage of wetlands is determined by the elevation of the property; therefore, it is different at most every site.

Determining landward edge of wetlands



To determine landward edge of vegetated wetlands, mark average low tide (MLW) and average high tide (MHW) on a piling. Measure the distance between MLW and MHW and multiply that figure by 1.5. Measure that answer up the piling from MLW and draw a horizontal line towards land. When the line touches land, that is the landward edge of vegetated wetlands.

Transitional Zone between Uplands and Submerged Systems



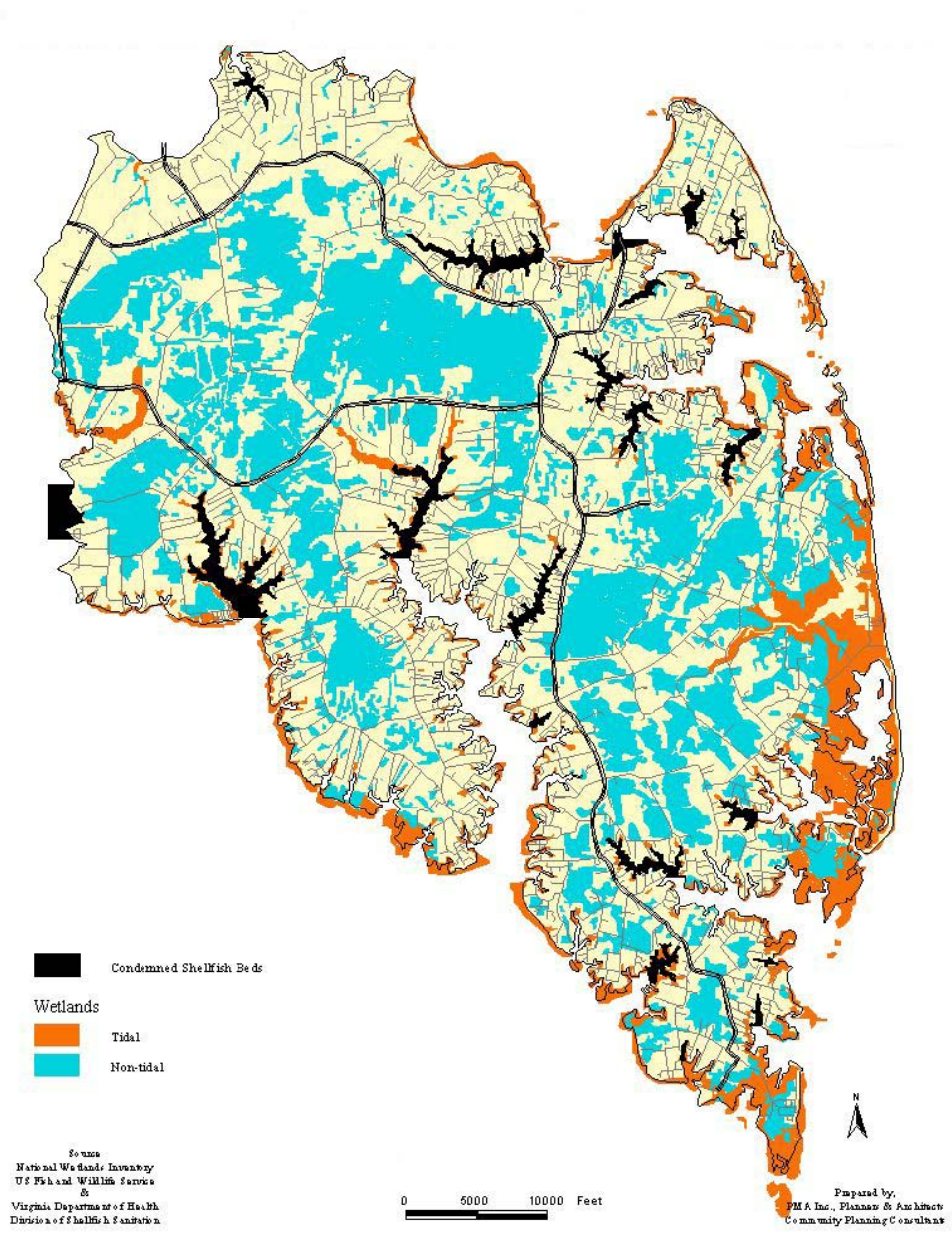
Drawing provided by VIMS

Wetlands serve as a transitional zone between uplands and subaqueous lands. Among other things they provide habitat (food and shelter) for both aquatic and terrestrial animals such as blue crabs, small fish and marsh birds. They are highly productive systems and contribute to aquatic food webs through the growth of algae and the export of detritus.

In addition, tidal wetlands function as kidneys, filtering and removing excess nutrients from the water that flows through them. Their rooted plants stabilize the shoreline reducing wave energy during storms. Marshes also improve water quality, reduce erosion and store flood water. Grass roots help to improve water quality by filtering groundwater and holding sediment in place. The shoots remove sediment from overland flow and help to reduce and absorb wave action.

Mathews County has 217 miles of shoreline

Mathews is almost completely surrounded by water. Much of the County's 217 feet of shoreline is exposed to wave energy generated by storms and/or boat traffic. It is a difficult task to be able to allow protection from erosion and at the same time to protect vegetated and non-vegetated wetlands and keep them from disappearing.



So what is to be done if property is experiencing erosion such as this undercut shoreline on Edwards Creek,

Or this eroded high bank on the Piankatank River,

Or has the beach, that may have been 100’ from the water, now eroded away like this property on Gwynn’s Island?

Traditionally, bulkhead was thought to be the answer. Although it may be a good solution for a marina channel, the transition zone between the uplands and the water is lost. The steep sides also stop access of critters who use both the uplands and the water.

Bulkheaded marina channel off Stokes Creek

A rock revetment is a better alternate. Wetlands grasses can grow channel-ward of the revetment, however, due to wave action against the rock, and/or elevation of the land channelward of the revetment, the wetland vegetation generally does not survive.

This picture shows a revetment being installed correctly. The rock was laid on filter cloth at a gentle 2:1 slope. A silt fence was installed to prevent any sediment from filtering into the creek.

Groins on a sand beach on Gwynn's Island

The purpose of a groin is to trap sand as it moves up or down the shoreline. A large amount of sand between low water and the uplands provides protection to the uplands during storm events. However there are two problems with groins. One is that they are dependent upon a sufficient supply of sand—no sand in the system, no sand to be caught by the groins. Secondly is that a groin robs sand from the adjacent downdrift property. As you can see, sand is building up on this side as the waves bring in the sand into this area; however, you generally will find an immediate loss of sand on the other side of the groin.

Rock sill protects existing marsh and uplands on Cobbs Creek

When there is a definite need for shoreline protection and it is determined that a structure is needed, rock sills and breakwaters are now the most often recommended method to control erosion. Both are considered a living shoreline for several reasons. They allow interaction between the water and the uplands and provide for long-term protection, restoration or enhancement of vegetated shoreline habitats.

Marsh toe protection on Queens Creek

Marsh toe protection is half the width of a sill and is placed directly against the marsh. It is normally constructed up to one foot above average high tide. The height and the type of construction allows water to access the marsh landward of the structure.

Aerial view of breakwaters at County-owned Festival Beach

Breakwaters on private property in Milford Haven near Hole in the Wall

Breakwaters, as shown here, breaks the force of the waves and dissipates the energy so the waves do not erode the beach or upland banks. The County has installed two breakwaters at Festival Beach. There are also breakwaters at Yorktown that you can view either from Yorktown or (carefully) from the Coleman Bridge. Because they are constructed with a gap between them, a scallop effect is formed in the break between the breakwaters. Breakwaters are designed site specific, taking into consideration the wave action, the direction of the predominate winds, and other factors.

Gabion Basket breakwaters located near the mouth of Winder Creek

The structures shown on the left are gabion baskets used as breakwaters. This is a considerably less expensive type of breakwater. The baskets are constructed of coated wire and filled with smaller rock than the breakwaters seen in the previous pictures. There is some concern that the wire containing the rock will decay over time and leave a pile of small rock to be tossed around in the waves.

Two rows of coir logs to protect plantings and shoreline in a cove off the North River

Coir Logs in pyramid–type construction in Woodas Creek

Coir logs are made of coconut fiber and are used to protect wetland vegetation that has recently been planted. They do an excellent job of allowing the plants to mature. Coir logs are expected to deteriorate within about 5 years. By that time the marsh should be well enough established to provide protection of the shoreline on its own. Coir logs are used in low wave energy areas; however, the picture on the right showing coir logs in Woodas Creek is somewhat experimental as that area gets a fair amount of boat traffic.

So as the sun sets on this presentation (this picture is of course a sun rise on Bethel Beach Preserve) hopefully you have increased your knowledge of wetlands and better understand why they are important to you . . .

For with healthy wetlands we can better preserve all of our
environment and keep the
Smiling Waters of Mathews County.

Wetlands Presentation

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