Attainable

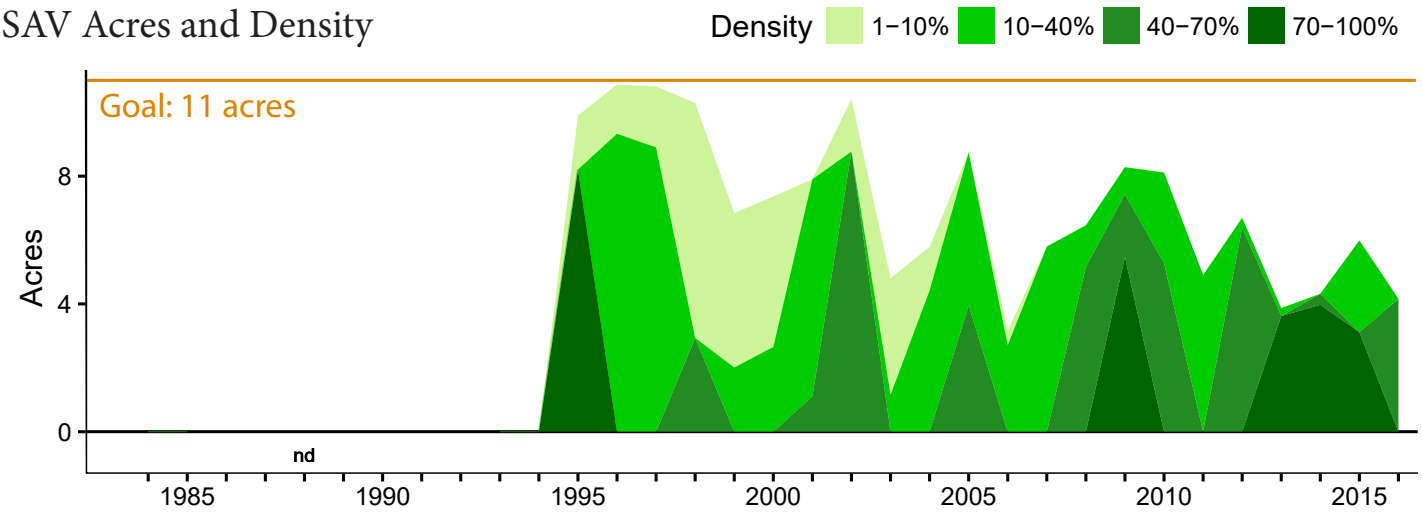
Lower Chesapeake Bay (CB8PH)

A restoration project facilitated the recovery of eelgrass in this segment near the mouth of the Chesapeake Bay.

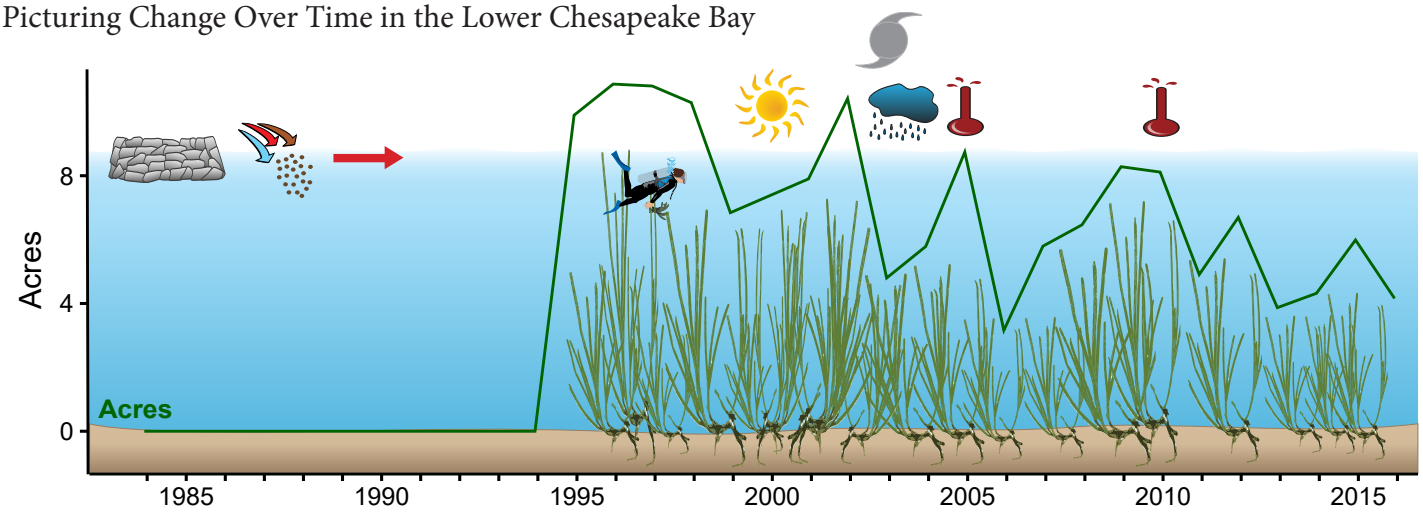
Executive Summary

Minimal historical information suggests that eelgrass abundance fluctuated in this segment throughout the early to mid-1900s. The passage of Tropical Storm Agnes in 1972 triggered the dramatic decline of any remaining eelgrass present. More recently, a small-scale but successful restoration project facilitated a slow recovery of eelgrass in the 1990s, but heat events in 2005 and 2010 contributed to significant declines of the plant in 2006 and 2011. Recovery did occur in the interim of these two periods due to improvements in water clarity and moderate water temperatures, however.

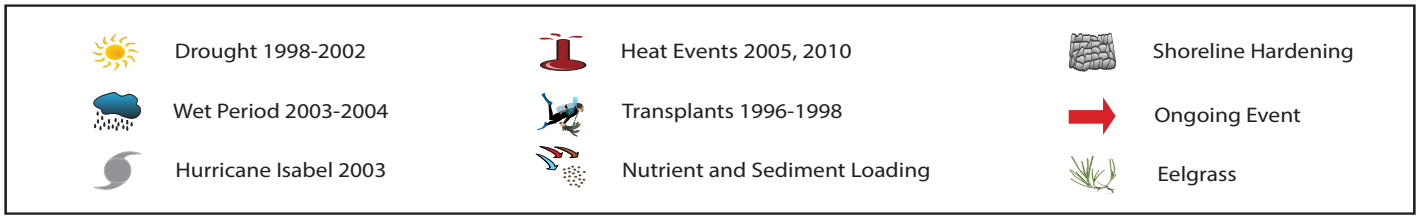
SAV Acres and Density



Picturing Change Over Time in the Lower Chesapeake Bay



Key



Attainable

Take Home Points

Goal - Attainable

The goal of 11 acres was almost achieved in 1996 and 1997. Given the proximity of this region to the clearer, cooler waters of the Chesapeake Bay this segment has the potential to reach its goal in subsequent years.

Historical Coverage

Minimal data on past SAV abundance

While there is no good historical information, it is likely that eelgrass was present in the early 1900s, retreated in the 1930s following the eelgrass epidemic and recovered through the 1960s.

Key Events

Tropical Storm Agnes

The passage of Tropical Storm Agnes in June 1972 probably resulted in the loss, or at least reduction, of any remaining eelgrass in this segment.

Eelgrass transplants facilitated recovery

Eelgrass was rare in this segment even before Tropical Storm Agnes. Eelgrass remained sparse until a small-scale eelgrass restoration program was initiated in 1996 and continued through 1998. Recovery was facilitated by the addition of adult plants at one site that continued to grow and expand related to long-term, consistent good water clarity.

Vulnerability/Resilience

Eelgrass is susceptible to heat events

Eelgrass is a cold-water SAV species in the Bay near its southern distributional boundary in the mid-Atlantic. Shallow water summertime extreme temperatures in August 2005 and June 2010 led to a slight reduction of eelgrass. One surprising aspect of eelgrass in this segment is that the decline following the heat events of 2005 and 2010 was not as severe as in other areas of the lower Bay. We attribute this difference to the physical location of this section to the lower Bay mainstem and the cooler, clearer water that enters Little Creek.

Shoreline alterations

This segment has been influenced by human activities since early colonization, with significant shoreline modifications and hardening that have eliminated shallow water habitat (e.g., Little Creek Amphibious Base, housing developments, marinas).

Management Implications

Nutrient and sediment reductions; aquaculture

Managers will be unable to do much about temperature as this is a more global issue. However, by reducing nutrients and sediments and improving water clarity, plants may be able to tolerate periods of warmer water. In addition, if and when water clarity improves, managers will have to deal with aquaculture requests, as well as existing leases where SAV may begin colonizing previously unvegetated areas. It is unlikely though that eelgrass would be able to colonize much of the highly exposed shoreline of the lower Bay.

References

Stevenson and Confer 1978; Orth and Moore 1983, 1984; Moore et al. 1999, 2000, 2004; Orth et al. 2010a, 2010b, 2017; Patrick and Weller 2015; Lefcheck et al. 2017, 2018

www.vims.edu/bio/sav/SegmentAreaChart.htm (abundance data)

www.vims.edu/bio/sav/maps.html (species information)

http://vecos.vims.edu/ (Virginia water quality data)