

Little Choptank River (LCHMH)

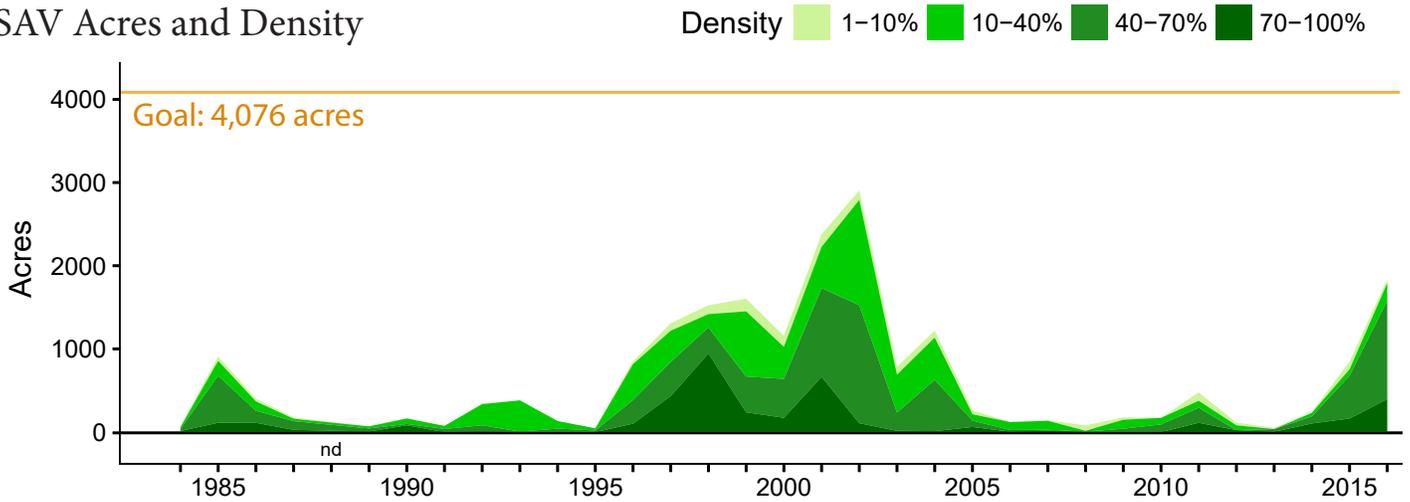


Submerged aquatic vegetation (SAV) in the Little Choptank River is vulnerable to climate impacts, but plenty of available habitat may aid resilience and foster recovery.

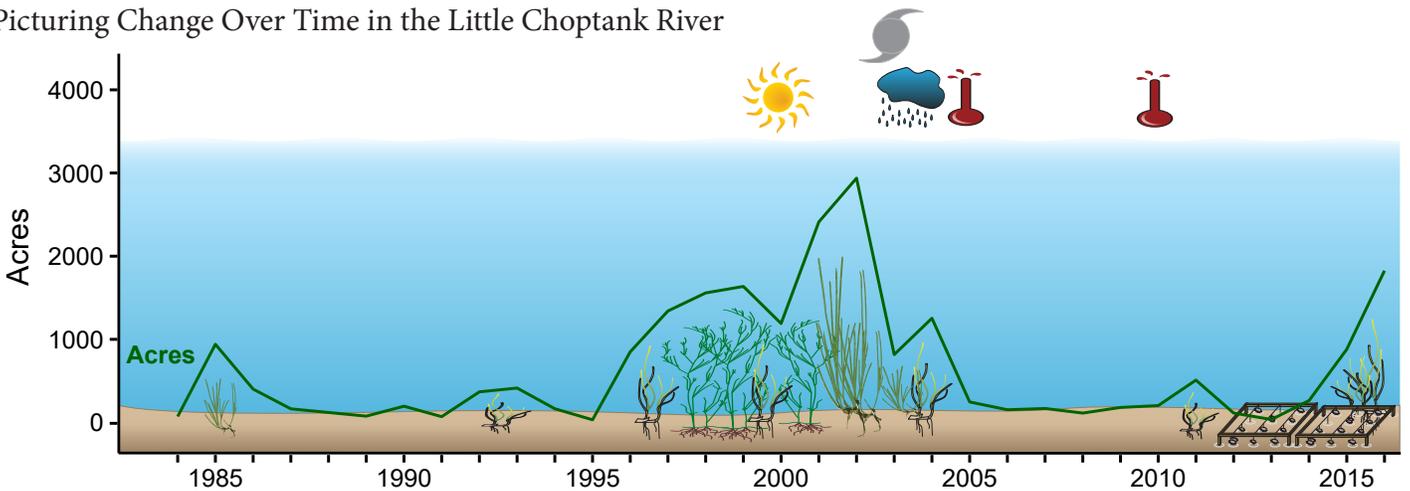
Executive Summary

SAV in the Little Choptank River was on its way to meeting its restoration goal when it peaked in 2002, but it was hindered by Hurricane Isabel in 2003. In recent years, SAV has begun to recover again in response to Chesapeake Bay-wide improvements in water quality, indicating that the SAV restoration goal for the Little Choptank River is potentially attainable. Though aquaculture may arise as a shallow-water habitat use conflict in this region, there is plenty of available habitat for both if managed properly.

SAV Acres and Density



Picturing Change Over Time in the Little Choptank River



Key

	Wet Period 2003-2004		Heat Events 2005, 2010		Horned Pondweed
	Hurricane Isabel 2003		Aquaculture		Eelgrass
	Drought 1998-2002		Widgeongrass		

Goal - Potentially Attainable

The goal of 4,076 acres has never been reached but is potentially attainable with continued improvements in water quality.

Historical Coverage

SAV resurgence until 2003 followed by decade of decline; recent resurgence associated with water quality improvement
SAV was likely abundant in the Little Choptank River prior to development of the Bay watershed. The first evidence of SAV in the Little Choptank River, however, was a herbarium specimen of widgeongrass collected in 1931. No further data is available until the 1960s, when surveys recorded widgeongrass, redhead grass, eelgrass and horned pondweed. At the onset of the Bay-wide aerial survey in 1984, there was relatively little SAV in the Little Choptank River, but a resurgence occurred in the late 1990s that lasted until 2003 when Hurricane Isabel delivered an abundance of freshwater to the region. The onslaught of freshwater likely contributed to the decline of SAV species that were adapted to this moderately salty system. SAV has begun to recover in recent years as a result of Bay-wide improvements in water quality facilitated by the Chesapeake Bay Total Maximum Daily Load (Bay TMDL). Widgeongrass remains the dominant species here, but eelgrass, redhead grass and horned pondweed have also been observed.

Key Events*Hurricane Isabel*

Hurricane Isabel prompted the loss of SAV in this river in 2003 when copious freshwater altered the moderately salty environment. SAV did not begin to fully recover until recent years in conjunction with Bay-wide water quality improvements.

Vulnerability/Resilience*Climate change impacts; aquaculture; plenty of available shallow water*

There is plenty of available habitat for SAV to recover in this river, but it is somewhat vulnerable to island erosion, sea level rise and the corresponding potential for shoreline alteration and nearshore land use changes associated with climate change. SAV in this river will also be somewhat vulnerable to the aquaculture industry that is emerging in the region.

Management Implications*Nutrient and sediment reductions; best management practices (BMPs)*

SAV in this river is responding to Bay-wide improvements in water quality, so all efforts should be made to implement BMPs that further reduce nutrient and sediment input into the system. Maintenance of forested land should be a priority. Appropriate management of the river would allow both aquaculture and SAV to thrive, so all efforts should be taken to accommodate both.

References

Stevenson and Confer 1978; Orth and Moore 1983, 1984; Moore et al. 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)
www.eyesonthebay.org (Maryland water quality data)