

# Severn River (SEVMH)

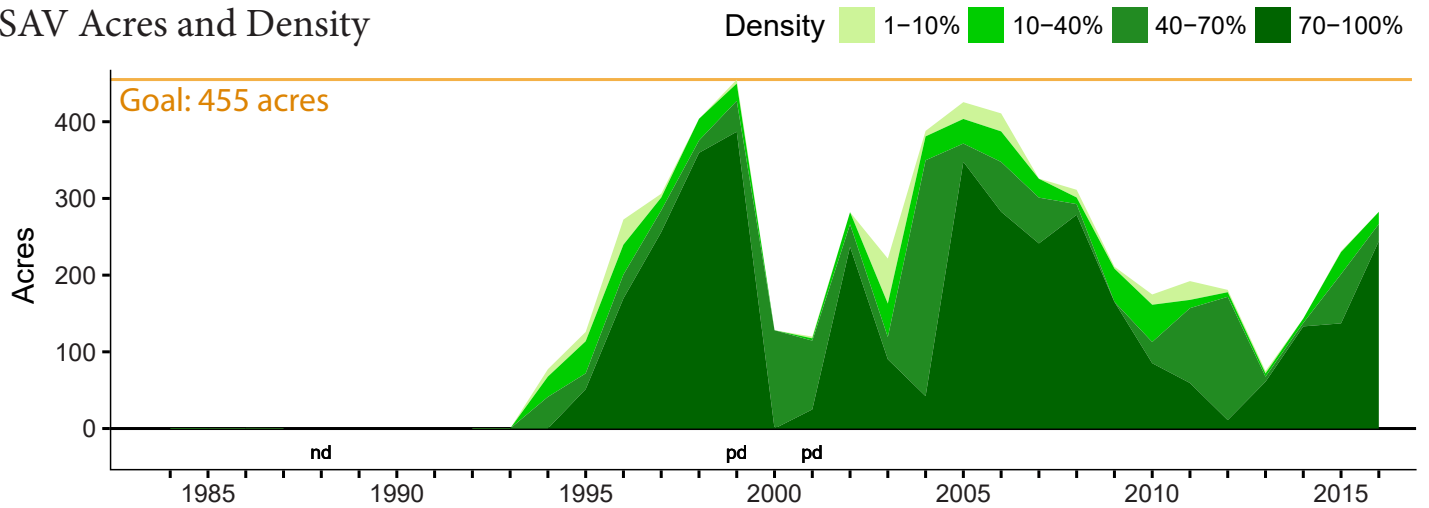


**Beds of submerged aquatic vegetation (SAV) dominated by widgeongrass are prevalent in the Round Bay region of the Severn River but limited elsewhere.**

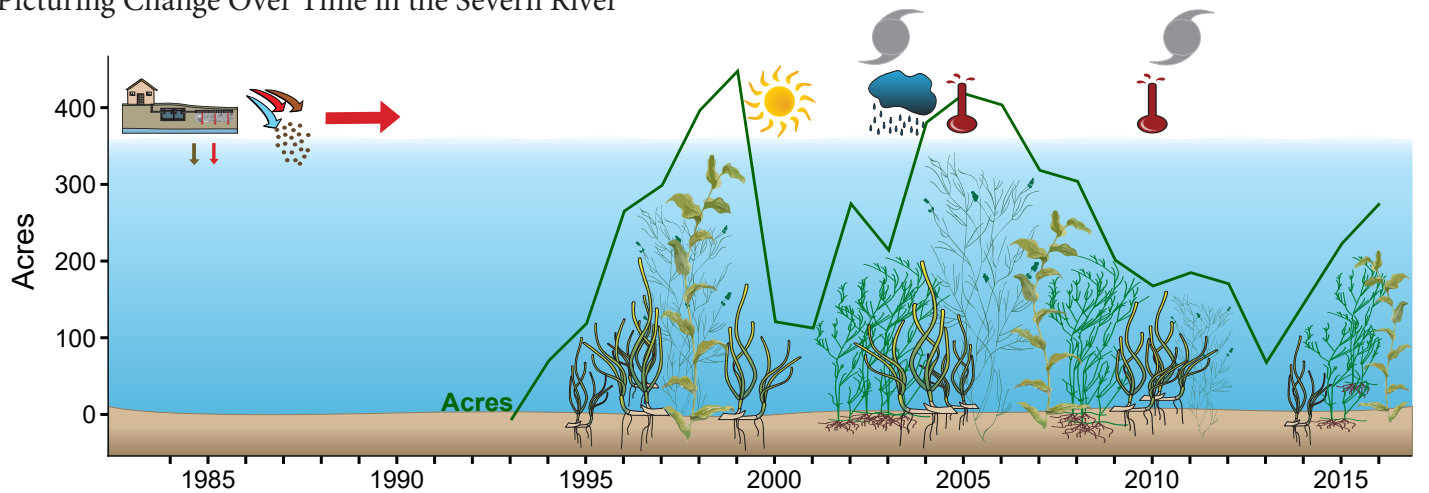
## Executive Summary

SAV records from the Severn River date back to 1893 and indicate that species diversity was higher then than it is now. At the onset of the Chesapeake Bay-wide aerial survey, SAV in the Severn River was minimal, but began recovering in the mid-1990s and has since fluctuated in abundance, with the majority observed in Round Bay. Although the Severn River watershed has maintained extensive forested land (generally associated with improved water quality conditions), many of the riverfront communities are still operating on septic, which is potentially contributing to a chronic nutrient problem and therefore reduced SAV cover. The 455-acre SAV restoration goal is attainable with continued efforts to reduce nutrient and sediment pollution to the system.

## SAV Acres and Density



## Picturing Change Over Time in the Severn River



### Key

	Wet Period 2003-2004		Tropical Storm Lee 2011		Sediment and Nutrient Loading		Widgeongrass
	Drought 1998-2002		Heat Events 2005, 2010		Ongoing Event		Sago Pondweed
	Hurricane Isabel 2003		High Number of Homes On Septic Systems		Redhead Grass		Horned Pondweed

**Goal - Attainable**

The goal of 455 acres is attainable and was reached in 1999. With continued improvements in water quality and clarity through reductions in sediments, nitrogen and phosphorus, there is no reason to believe that the 455-acre goal will not be reached again in the future.

**Historical Coverage**

*High diversity indicated from historical records; minimal SAV coverage 1984-1994; abundance from 2000 to present*  
SAV was most likely abundant in the Severn River prior to population expansion in the Bay watershed, particularly prior to the founding of Annapolis, which sits at the mouth of the river and expands northward towards its headwaters. SAV was documented in the Severn River as early as 1893, when sago pondweed herbarium specimens were collected. In the decades following and up through the 1970s, several other species were collected or observed, including redhead grass, widgeongrass, milfoil (first appearing in the 1960s), horned pondweed, wild celery, common waterweed, hornwort and naiads. Data from the Bay-wide aerial survey indicates that SAV cover was minimal between 1984 and 1994. In 1994, SAV began to recover and expanded to an all-time recorded high of 455 acres in 1999. Common species currently observed in the Severn River include widgeongrass, redhead grass, sago pondweed and horned pondweed. Freshwater species have also been noted in the upper, freshwater reaches of the river.

**Key Events**

*SAV resurgence starting in 1994*

There is limited concrete data to explain the resurgence of SAV in the 1990s, but anecdotal reports indicate that SAV disappeared from the Severn River in the 1970s due to a combination of rapid development, highway construction and an active campaign to reduce its cover using herbicides. The herbicides used were long-lasting and may have remained in the sediments until the 1990s, when SAV recovery was first noted.

**Vulnerability/Resilience**

*Forested watershed but still dominated by septic*

Many of the riverfront communities along the Severn River are still on old and failing septic systems. Because of this, there remains a nutrient loading problem in the river despite extensive tree canopy and maintenance of forested land.

**Management Implications**

*Nutrient and sediment reductions*

Without intervention, nutrient and sediment loading to the Severn River will continue to hamper full SAV recovery. Reductions in both would most likely lead to a full recovery, so all efforts to reduce loading via best management practices that favor SAV recovery are recommended. Watershed residents should be encouraged/required to upgrade old septic tanks and leach fields to modern, high-efficiency on-site wastewater treatment systems.

**References**

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

[www.vims.edu/bio/sav/SegmentAreaChart.htm](http://www.vims.edu/bio/sav/SegmentAreaChart.htm) (abundance data)

[www.vims.edu/bio/sav/maps.html](http://www.vims.edu/bio/sav/maps.html) (species information)

[www.eyesonthebay.org](http://www.eyesonthebay.org) (Maryland water quality data)

[www.aacounty.org](http://www.aacounty.org) (for Anne Arundel County sewer and septic information)