



Backgrounder

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SAV 2000 Survey: Preliminary Executive Summary

The distribution of submerged aquatic vegetation (SAV) in Chesapeake Bay, its tributaries, and the coastal bays of the Delmarva Peninsula, was mapped from 2,033 black and white aerial photographs. These were taken between May and October 2000, at a scale of 1:24,000, encompassing 173 flight lines covering 2,340 miles of shoreline.

Chesapeake Bay

For 2000, 27,986 hectares (69,126 ac) of SAV were mapped in Chesapeake Bay and its tributaries. This represents 61% of the Tier I goal (46,022 ha, 113,673 ac) set by the 1993 Chesapeake Executive Council, Directive 93-3.

Significant changes in SAV distribution were measured between 1999 and 2000. In the regions that were mapped both years, representing 94% of the total SAV mapped in 2000, Chesapeake Bay SAV increased 1% from 1999 to 2000 compared to an 8% increase from 1998 to 1999 for the same mapped regions.

Because portions of the Bay were not mapped in 1999 due to poor atmospheric conditions and severe fall storm events, all direct comparisons to analyze change in SAV distribution and abundance between 1999 and 2000 are restricted to only those regions that were mapped in both years. For the seven segments not mapped in 1999, 2000 data are compared with totals from 1998.

In 2000, SAV increased in two (Upper and Lower Bay) and decreased in one (Middle Bay) geographic zones delineated for Chesapeake Bay. SAV increased in 32, decreased in 19, and remained unvegetated in 27 of the 78 CBP segments (Table 6). Fourteen of the segments met the Tier I goal.

Upper Bay Zone

In the Upper Bay Zone (17 CBP segments extending south from the Susquehanna River to the Chester and Magothy rivers), 5,998 hectares (14,814 ac) of SAV were mapped for 2000. Comparing the same mapped regions between 1999 and 2000, SAV increased 36% (1,215 ha, 3,001 ac) in 2000, comprising 83% of the Tier I goal.

Eight segments in the Upper Bay Zone met the Tier I goal: CB1TF, NORTF, ELKOH, BOHOH, CB2OH, SASOH, BSHOH, and GUNOH.

- ▲ 114%, Elk River (ELKOH), 692 ha (2000) vs. 323 ha (1999)
- ▲ 107%, Bohemia River (BOHOH), 76 ha (2000) vs. 37 ha (1999)
- ▲ 100%, Upper Chesapeake Bay (CB2OH), 64 ha (2000) vs. 0 ha (1999)*

Visit the Chesapeake Bay Program website:
<http://www.chesapeakebay.net>

The Chesapeake Bay Program is restoring the Bay through a partnership among the U.S. Environmental Protection Agency representing the federal government, the State of Maryland, the Commonwealth of Pennsylvania, the Commonwealth of Virginia, the District of Columbia, the Chesapeake Bay Commission, and participating citizen advisory groups.

- ▲ 300%, Sassafras River (SASOH), 389 ha (2000) vs. 97 ha (1999)
- ▲ 100%, Bush River (BSHOH), 26 ha (2000) vs. 0 ha (1999)*
- ▲ 244%, Gunpowder River (GUNOH), 190 ha (2000) vs. 55 ha (1999)*
- ▲ 678%, Middle River (MIDOH), 300 ha (2000) vs. 39 ha (1999)

Three of the 17 segments decreased by at least 20% and by at least 5 hectares (Table 6). These segments include:

- ▼ 100%, Patapsco River (PATMH), 0 ha (2000) vs. 6 ha (1998)**
- ▼ 74%, Magothy River (MAGMH), 2 ha (2000) vs. 7 ha (1999)*
- ▼ 100%, Lower Chester River (CHSMH), 0 ha (2000) vs. 298 ha (1999)

Four of the 17 segments remained unvegetated (Table 6).

Middle Bay Zone

In the Middle Bay Zone (33 CBP segments extending south from the Bay Bridge to the Rappahannock River and Pocomoke Sound, and including the Potomac River), 13,548 hectares (33,465 ac) of SAV were mapped for 2000. Comparing the same mapped regions between 1999 and 2000, SAV decreased 9% (1,384 ha, 3,418 ac) in 2000, comprising 54% of the Tier I goal for the Zone. Four segments in the Middle Bay Zone met the Tier I goal: PAXOH, PAXTF, POTMH, and MATTF.

Seven of the 33 segments increased by at least 20% and by at least 5 hectares (Table 6). These segments include:

- ▲ 42%, Lower Central Chesapeake Bay (CB5MH), 1,283 ha (2000) vs. 906 ha (1999)
- ▲ 48%, Honga River (HNGMH), 1,142 ha (2000) vs. 773 ha (1999)
- ▲ 89%, Manokin River (MANMH), 183 ha (2000) vs. 97 ha (1999)
- ▲ 30%, Big Annemessex River (BIGMH), 238 ha (2000) vs. 183 ha (1999)
- ▲ 20%, Middle Potomac River (POTOH), 1,582 ha (2000) vs. 1,316 ha (1999)
- ▲ 58%, Mattawoman Creek (MATTF), 134 ha (2000) vs. 85 ha (1999)
- ▲ 154%, Piscataway Creek (PISTF), 129 ha (2000) vs. 51 ha (1999)

Eight of the 33 segments decreased by at least 20% and by at least 5 hectares (Table 6). These segments include:

- ▼ 100%, Middle Central Chesapeake Bay (CB4MH), 0 ha (2000) vs. 10 ha (1999)
- ▼ 100%, Eastern Bay (EASMH), 0 ha (2000) vs. 2,005 ha (1999)
- ▼ 56%, Mouth of the Choptank River (CHOMH1) 681 ha (2000) vs. 1,534 ha (1999)
- ▼ 28%, Little Choptank River (LCHMH), 468 ha (2000) vs. 649 ha (1999)
- ▼ 72%, Severn River (SEVMH), 52 ha (2000) vs. 184 ha (1999)*
- ▼ 100%, South River (SOUH), 0 ha (2000) vs. 7 ha (1999)

- ▼ 39%, Upper Patuxent River (PAXTF), 37 ha (2000) vs. 61 ha (1998)**
- ▼ 56%, Lower Potomac River (POTMH), 423 ha (2000) vs. 951 ha (1999)

Twelve of the 33 segments remain unvegetated (Table 6).

SAV abundance in the Tangier Sound (TANMH) and Honga River (HNGMH) segments continued to increase (1,157 ha, 2,859 ac) in 2000 following the 2,080 hectares (5,137 ac) increase in 1999. The successive increases reversed the largest single year decline in 1998 of 1,724 hectares (4,258 ac). At the same time, the Choptank River Mouth segment (CHOMH1) continues to decline from a peak abundance in 1997 (Table 6). SAV in the Lower Potomac River (POTMH) decreased 528 hectares (1,304 ac), the first decline for this segment since 1992. Eastern Bay (EASMH) was devoid of SAV in 2000 for the first time in the history of the aerial survey

Lower Bay Zone

In the Lower Bay Zone (28 CBP segments covering the region south from the Rappahannock River and Pocomoke Sound regions to the mouth of the Bay), 8,440 hectares (20,847 ac) were mapped for 2000. Comparing the same mapped regions between 1999 and 2000, SAV increased 5% (378 ha, 934 ac) in 2000, comprising 61% of the Tier I goal for the Zone. Two segments in the Lower Bay Zone met the Tier I goal: JMSPH and CHKOH.

Six of the 28 segments increased by at least 20% and by at least 5 hectares (Table 6). These segments include:

- ▲ 120%, Lower Rappahannock River (RPPMH), 73 ha (2000) vs. 33 ha (1999)
- ▲ 49%, Corrotoman River (CRRMH), 107 ha (2000) vs. 72 ha (1999)
- ▲ 118%, Upper Rappahannock River (RPPTF), 16 ha (2000) vs. 7 ha (1999)
- ▲ 47%, Piankatank River (PIAMH), 171 ha (2000) vs. 117 ha (1999)
- ▲ 22%, Mouth of the James River (JMSPH), 38 ha (2000) vs. 31 ha (1999)
- ▲ 30%, Chickahominy River (CHKOH), 48 ha (2000) vs. 37 ha (1999)*

Three of the 28 segments decreased by at least 20% and by at least 5 hectares (Table 6). These segments were:

- ▼ 100%, Upper Mattaponi River (MPNTF), 0 ha (2000) vs. 34 ha (1998)**
- ▼ 25%, Upper James River (JMSTF), 27 ha (2000) vs. 36 ha (1998)**
- ▼ 49%, Lynnhaven & Broad Bays (LYNPH), 19 ha (2000) vs. 38 ha (1999)

Eleven segments remained unvegetated (Table 6).

SAV increased in the Eastern Lower Chesapeake Bay (CB7PH) and Mobjack Bay (MOBPH) segments by 68 and 109 hectares (167 and 269 ac), respectively; this gain (2% and 3%, respectively) reverses the 8% and 12% loss in each of these segments in 1999 (Table 6).

Delmarva Peninsula Coastal Bays Zone

In the Delmarva Peninsula Coastal Bays Zone (Assawoman, Isle of Wight, Sinepuxent, Chincoteague, and Southern Virginia Coastal Bays) 6,854 hectares (16,930 ac) were mapped in 2000, the first decline for this zone since 1995. The 346 hectares decrease (5%) follows the survey high of 7,200 hectares (17,785 ac) mapped in 1999 (Table 6).

- ▼ 22%, Assawoman Bay (AAWPH), 208 ha (2000) vs. 265 ha (1999)
- ▲ 7%, Isle of Wight Bay (IOWPH), 106 ha (2000) vs. 99 ha (1999)
- ▲ 7%, Sinepuxent Bay (SPXPH), 686 ha (2000) vs. 643 ha (1999)
- ▼ 5%, Chincoteague Bay (CHNPH), 5,855 ha 2000) vs. 6,193 ha (1999)

There continues to be no SAV mapped in the Southern Virginia Coastal Bays Segment; however, several small (<4 m²) natural patches were noted in South Bay and Cobb Island Bay by VIMS staff. Also, several small-scale test transplantings from 1997-2000 in Magothy Bay and South Bay continued to persist.

* Segment comparison restricted to areas mapped in both 1999 and 2000

** Segment comparison of 1998 and 2000 data (where 1999 was not mapped)

This executive summary prepared by the Virginia Institute of Marine Science. For complete survey results, please visit <http://www.vims.edu/bio/sav/index.html> or contact Dr. Robert Orth at 804-684-7392.