

Funding Support for the Chesapeake Bay SAV Aerial Survey: History, Current Shortfall and Long Term Funding Strategy

The Chesapeake Bay SAV Aerial Survey has been an integral data source to support science based management products and outcomes. The annual survey provides an annual comprehensive assessment of SAV distribution and abundance in the Chesapeake Bay, its tributaries, and the coastal bays, leading to annual SAV reports, maps, and data made publically available on the Virginia Institute of Marine Science (VIMS) website.

Funding for the aerial SAV survey comes from multiple resource agencies with a significant match from VIMS. There is a long funding history including, in the past, a diversity of funding agencies; however, the federal agency partners and their funding contributions have declined significantly over time. EPA has become the sole federal funding agency even though multiple federal agencies utilize and require the data of this survey in supporting resource management and regulatory decisions. Numerous resource agencies, both state and federal, rely on this survey for permitting, dredging, aquaculture decision making, shoreline management, communications to the public, etc. The United States Army Corps of Engineers (USACE) and National Marine Fisheries Service (NMFS) use the aerial survey data to review projects to the extent that they require states to review aquaculture lease permits using the aerial survey data.

Funding History¹

From 1974-2012, EPA has contributed \$4,215,301 towards the baywide SAV survey. USFWS has contributed \$409,500, NOAA has contributed \$260,000 (with \$180,000 of that total as an EPA payback), and USACE has contributed \$110,000. Based on total funding contributions over the years, EPA has provided 54% of the funds, USFWS 5%, NOAA 3% (with most of NOAA funds as an EPA payback), and USACE 1%, with Maryland and Virginia contributing the remaining funds (Figure 1).

Although 2013 funding commitments have been received from EPA, VIMS, Virginia, and Maryland, the partnership is in need of \$163,000 to ensure successful completion the 2013 survey (Table 1). USACE, NOAA, and USFWS must step up and commit to close the 2013 funding gap. Without this funding, work on the SAV Aerial Survey will not be able to continue past December 2013 and VIMS will not be able to provide the full range of data, map and informational products which the Partnership has come to depend on for the past 35 years.

¹ The funding for the 1974 through 1986 surveys are estimates and should not be directly compared with the baywide surveys conducted since 1989. 1974, 1980, 1981 were surveys of only part of the Virginia shoreline using early techniques and VIMS aircraft. The 1978, 1984-1986 baywide surveys were conducted by VIMS in Virginia and by EPA's Environmental Photographic Interpretation Center and their contractor Aeroeco. The costs for the Virginia portion of the Bay were artificially low due to use of a VIMS aircraft and vintage mapping camera. VIMS and EPA were unable to estimate costs for the Maryland portion during this timeframe. 1989 was the first year VIMS alone surveyed the entire Bay and starting bidding out the aerial photography acquisition to private aerial photographic firms.

Figure 1. Contribution percentage over the years (1974-2012) by partner agencies without VIMS matching funds.

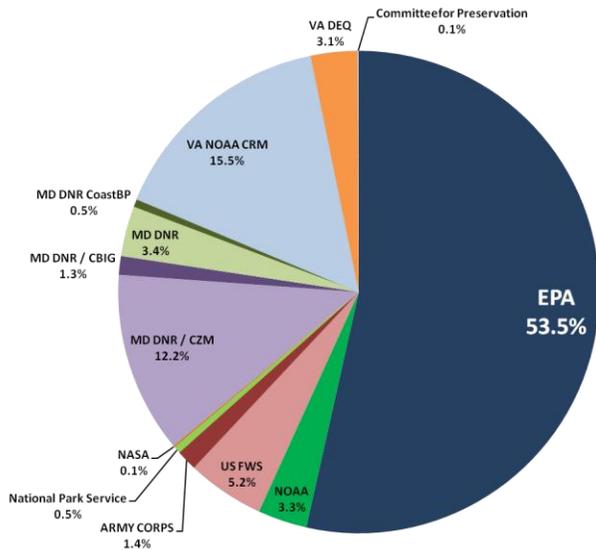


Table 1. Funding Commitments for SAV Aerial Survey 2013.

Agency	Funding Amount	Starting Date
EPA	\$200,000	In Hand
VA CRM	\$60,000	10/1/13
VA DEQ	\$21,000	7/1/13
MD DNR	\$45,000	1/1/14
USACE	--	
NOAA	--	
USFWS	--	
Total 2013 Partner Commitments	\$326,000	
VIMS Match 2013	\$190,576	
Total Funding Needed for 2013	\$679,576	
2013 Shortfall	\$163,000	

We need to return to a multi-agency funding model to sustain the SAV aerial survey into the foreseeable future. Factoring in the significant VIMS cost share, it is recommended the Partnership to move towards a 25% state, 40% EPA, and 35% other federal agency funding commitment to ensure this vital survey is able to collect and report data in the future. It's recommended this proposed funding allocation commitment be reevaluated every six years with re-competition of the baywide SAV aerial survey cooperative agreement.

Documentation for Incremental Increasing Costs of the Aerial Survey Over Time

Dr. Bob Orth provided this detailed description of the reasons behind the incremental increases in the total cost for the baywide SAV aerial survey over the past 35 years, as the partners have requested more and more information, products, timely data delivery, and on-line access to the full suite of products, data, photos, and maps.

1. Over the course of this survey of almost 35 years, the Virginia Institute of Marine Science (VIMS) has had regular salary increases except in the very recent past. Salary increases have generally outpaced increases in the grant support.
2. With expertise gained by the VIMS GIS staff, they had to reclassify them which have amounted to a small increase in salary.
3. Along with salary increases, the fringe benefit percentage has almost doubled to 40% over the past 35 years.
4. VIMS indirect cost (IDC) rate has also increased over time and is now 44%.
5. Every 5 years, VIMS has to bid out the aerial contract. The cost of the aerial contract has increased over time especially in recent years as aviation fuel prices have increased significantly.
6. In 1998, VIMS added the tidal and oligohaline areas of the James, York and Rappahannock rivers to the aerial survey based on observations that SAV were observed to be increasing there. VIMS added 20 flightlines (about a 20% increase) that covered 25 quadrangles. These were very complicated areas as they included SAV in many of the small tidal creeks and were a challenge (and very time consuming) to map. And they consequently influenced the delivery time of the SAV numbers which was noted in the 2006 aerial survey program review (see #7). The budget increased only slightly with funds from VA DEQ but only from 1999 on, not nearly enough to cover the increased costs (see #10 below).
7. In 2006, the baywide SAV aerial survey program was reviewed by SAIC at the request of the Chesapeake Bay Program Partnership's Living Resources Subcommittee and Monitoring Subcommittee to determine the feasibility of alternative means of collecting the same SAV distribution and abundance information. Based on some recommendations made then to improve the delivery time of the product (SAV numbers) VIMS added a component to the aerial contract that included GPS positioning to help in the ortho-rectification process. This increased the aerial contract by approximately \$25,000 per year (funding – see #10 below).
8. The total amount of grants for any given year has varied, some of it related to which state and federal agency partners funded it and what was their allowable IDC rate.
9. The estimated cost for the 2013 survey includes an IDC rate of 48%, set at the time of the recent cooperative agreement re-competition by EPA. Because VIMS will get grants for agencies that have allowable rates of only 25%, the total cost will change accordingly.
10. In a number of years when we had expected shortfalls, the difference was made up with funds from VIMS, generally extracted from Dr. Bob Orth's SAV research program.

Questions/Feedback from the May 22, 2013 Federal Office Directors Meeting

The Partnership's Federal Office Directors were briefed on the current shortfall in funding the baywide SAV aerial survey in 2013. The following written responses were prepared by Dr. Bob Orth and Lee Karrh, CBP SAV Workgroup Chair.

Concerns expressed about the continued rising costs of the SAV aerial survey.

RESPONSE: All monitoring programs increase in cost over time. Most of the increased costs have been the result of required changes in salaries, fringe benefits, and indirect cost recovery rates, and recent increases in the aerial contract. The contractor VIMS currently uses has costs that are almost impossible to compete with given the difficult and challenging contractual requirements to obtain photography for SAV mapping. This perhaps explains why VIMS usually get no competitors bidding on this project. VIMS' requirements demand an almost 24/7 availability when flight windows are open. Many aerial photographic firms will not be willing to have a plane sit of the ground on site waiting for appropriate water and atmospheric conditions. Also, if you look at the 1989 costs, and add some dollars to that amount for the flight lines and work added in 1998 to full cover the Virginia tidal tributaries, adjusted for inflation the actual cost of the survey is not that much different for 2013. As a matter-of-fact, VIMS believes the costs of the current survey are less than what it cost in 1986 when 2 groups were conducting the survey.

What steps could be taken to hold the line on the costs?

RESPONSE: Every possible line item has been considered for reduction in previous years. The current budget now supports only salaries, fringe benefits, the aerial contract, and a modest travel budget for conference presentations, and travel for contract administration. Changes in the salaries, fringe benefits and IDC rates are dictated by state standards. What steps could be taken to reduce the overall costs of the survey? (Peyton Robertson, NOAA) A significant change occurred in the mid-1990s when we moved from paper copies, that entailed maps that were and drawn by individuals, to web based reports where maps were digitally drawn. This saved almost \$20K, which forestalled a major budget issue in salaries when we were able to direct that amount to salary shortfalls. There are no equipment costs as hardware (computers) is purchased by VIMS private funds. And personnel costs for GIS trained personnel are quite low. Individuals in the SAV mapping program acquire significant skills in sophisticated software programs and could easily be attracted to higher paying jobs in the private sector. Current salaries for support personnel, many of whom have been with the monitoring program for 20 years or more, are modest.

How much of the funding from Maryland and Virginia is actually federal funding which is then passed through the states?

RESPONSE: In Maryland, all the current funds are state general funds (\$45,000). In years past, Maryland used a combination of Chesapeake Bay Implementation Grant (CBIG) funds from

EPA and Coastal Zone Management (CZM) funds from NOAA, but those funds have since been reprogrammed. In Virginia, \$60,000 comes from Virginia's Coastal Program which is funded by NOAA. These costs have remained at the \$60,000 level since 1999 despite increased costs for everything. The Virginia Department of Environmental Quality funds are state Chesapeake Bay funds. The VIMS mixing funds are general funds for the senior principal investigator and GIS/Programmer salary and benefits. Monies for hardware come from VIMS private funds.

Could we use FY2014 federal agency funding to address the 2013 aerial survey's funding shortfall?

RESPONSE: Yes, given the existing committed funding will cover the required work up through the end of December 2013, funds which are provided beginning on Jan. 1, 2014 would be quite appropriate.

What is the source of the 2012 Corps of Engineers funding?

RESPONSE: Cooperative Ecosystem Studies Units (CESU) funding.

So exactly who in the Corps of Engineers uses the SAV aerial survey and for what regulatory purposes?

RESPONSE: The US Army Corps of Engineers has been using the VIMS SAV Surveys since the early 1980s. The Regulatory Branch uses SAV mapping routinely for evaluating tidal permit projects. The SAV Surveys are also used by the Navigation Branch and Planning Division for project planning and documenting historic presence of SAV. The VIMS SAV Survey is central to monitoring the health and planning of restoration in the Chesapeake Bay. These surveys are also used by multiple federal, state and local agencies and programs in their decision making in the Chesapeake Bay. Additionally, the Corps' Region General Permit 1 requires Maryland to use the VIMS data (assuming annual acquisition) to permit aquaculture and to maintain leases in the future. This also applies to the Norfolk District.

What are the reasons behind the recent declines in state funding of the SAV aerial survey?

RESPONSE: The global recession beginning in 2008 hit state budgets hard. For example, Maryland Department of Natural Resources lost roughly a quarter of our work force (primarily through voiding vacant positions and attrition, but also for-real layoffs). Maryland's General Assembly approved an SAV budget increase in 2007 and MD's governor is very supportive of monitoring, or our \$45,000 funding investment would have gone away a while back. In Virginia, at VIMS, salaries for state-supported technical support positions has been hit hard. VIMS lost monies supporting 1.5 positions related to the SAV aerial survey work.

Do we need to re-evaluate our overall monitoring priorities and make decisions on monitoring investments in a bigger context?

RESPONSE: Yes, building on the prior decisions of the Partnership in 2009 coming from the Monitoring Re-alignment process.

Do we need the SAV aerial survey to be conducted every year?

RESPONSE: Yes, particularly in regards to states' assessment of SAV restoration acreage and water clarity standards attainment for each of the 92 Chesapeake Bay segments. The Corps' Region General Permit 1 assumes annual collection of SAV bed location and size data. Also, There is the real potential for loss of the highly skilled personnel need to conduct the survey if the monitoring isn't annual. Mapping SAV is a skill that takes months to develop as well as developing skills in using sophisticated GIS programs.

REQUESTS FOR MANAGEMENT BOARD DECISIONS

DECISION REQUESTED: The Management Board's support for formally requesting our federal agency resource management and regulatory partners who have helped fund the baywide aerial survey in the past—specifically U.S. Fish and Wildlife, the U.S. Army Corps of Engineers, and NOAA—commit to work collectively to address the existing funding shortfall for successful completion of the 2013 baywide SAV aerial survey.

DECISION REQUESTED: The Management Board's approval of a long term funding strategy (to be presented to the MB in the fall) directed towards preventing future funding shortfalls by: 1) diversifying the number and variety of funding sources; and 2) setting funding allocation targets for the more diverse set of funding partners.