Chesapeake Bay Program
Science. Restoration. Partnership.

2015 *State of the Program:* Chesapeake Executive Council

Interconnectedness & Resilience—

A Swim through the Watershed Agreement

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Today, I want to depart from the kind of State of the Program presentations that have been given in the past. I want instead to highlight what I consider to be one of the most important features of the new *Chesapeake Bay Watershed Agreement*, the inter-relationships and inter-dependence of the goals and outcomes which reflect how natural eco-systems are structured and function; sharing the ways that our work as Bay Program partners under the new agreement mirrors the structure of a healthy and complex ecosystem.

To illustrate this, I plan to guide you on journey through the Watershed Agreement by describing the life of one of its inhabitants, a fish – the American shad. American shad are the most well-known river herring in the Chesapeake Bay. Shad form an important link in the Bay's food web, and once supported the most valuable finfish fishery in the region. But pollution, historic overfishing and the construction of dams that block the migratory fish from reaching their spawning grounds have lowered shad populations. Commercial shad harvest is now closed across most of the region

Their life's journey through the ecosystem shows how incredibly important it is for all of the interconnected Bay systems to be balanced and healthy – not just for them but for all the Bay's organisms, including us.

Shad are one of the Chesapeake's many anadromous fish – meaning they spawn in the upper, freshwater-reaches of the Bay's tributaries and live their adult lives in the ocean, passing through all of the various waters of the Bay system.

They start life as eggs, laid in fresh waters of the upper rivers of our Bay by adults who've made the long trip upstream. Because of our work to conserve lands and create forest buffers, there are clean waters that will support these river hatcheries for shad.

And when a watershed is healthy and waters are clean, conditions are right not only for eggs to be laid and to hatch, but also for streams to be full of insects and small creatures for the newly hatched shad fry to eat and thrive over their first summer, spent in fresh waters.

After spending their first summer in fresh waters, shad move downstream in the fall in schools, traveling alongside us and through a variety of environments – from rural and forested landscapes, to urban and suburban communities.

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A species that is particularly sensitive to pollution, they are found in only cleaner tributaries. Because of our efforts to reduce pollution and toxins while also creating favorable fish habitats, they do best in clean waters with places where they can find shelter from predators, such as wetlands and underwater grass beds, alongside other creatures like vulnerable softshell crabs. This is why the new Agreement contains a continued commitment from each of the jurisdictions to the Watershed Implementation Plans.

Underwater grasses serve as an important habitat for spawning fish and crabs. The Bay Program conducts annual aerial surveys of grass beds throughout the Bay. Next week we will be releasing the results of the 2014 survey, which will show that there has been an increase in the total acreage of grass beds throughout the Bay and a substantial increase in the middle Bay. Earlier this month, the Chesapeake Bay Stock Assessment Committee released its annual blue crab advisory report, which found that there were approximately 101 million female spawning-age crabs in the Chesapeake Bay at the start of the 2015 crabbing season. This is above the established threshold of 70 million, but not as many as the target of 215 million. Numbers of juvenile crabs are up from last year, as well. It is estimated that there were 269 million juvenile crabs in the Bay at the start of 2015 crabbing season. Some of these crabs will mature to be adults, and will be big enough to be harvested in early fall as well as contribute to next year's spawning stock.

The young shad who reach the Bay will pass through to the ocean, where they will grow to adulthood. But first, they will continue to play an integral part of the saltwater food web, feeding off the bottom-dwelling worms and algae found in places like healthy oyster bars, and serving as forage fish – nutritious food for larger species such as rockfish and bluefish.

The new agreement recognizes the importance of forage fish to the health of the Bay in providing a balanced ecosystem. The Forage Fish Outcome requires the partnership to develop a strategy for assessing the forage fish base as a food for predatory species with the aim of establishing a more balanced system.

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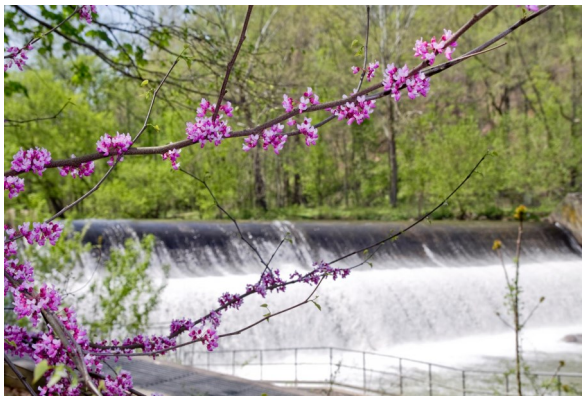
As adults, shad will begin their journey in reverse, leaving the ocean, passing through healthy Bay waters and into our rivers and streams.

Along the way, a few will serve as sport for the recreational catch-and-release fishery. In addition to the ongoing challenges related to predation, as well as nutrient and sediment pollution and changing natural conditions, . . .their major challenge is navigating blockages such as dams, something they can not do with out the help of man-made fish passages.

In May, the Bay Program announced the latest shad population numbers at Fletchers Cove along the Potomac. Between 2000 and 2014, we have seen a four-fold increase in the total shad population watershed-wide. The shad population in the Potomac is at 130% of its target; in the Rappahannock, 111%. In the York, the shad population more than doubled from 23% to 58% of its goal. Clearly we are making progress.

Where shad populations have not recovered, like the James and the Susquehanna, we know why. Where water quality is good, where restrictions such as dams have been removed or fish ladders have been installed, where the fishery has been managed and re-stocked, we see shad populations rebound. The picture at left is the Bloede Dam on the Patapsco River in Maryland which is slated for removal.



There is a cultural component to the shad fishery as well. Communities in the watershed knew when the shad were running by when the “shadbush” blossomed. Linkages between humans and the natural environment like this have been lost over time. We are no longer in sync with the ecosystem.

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Just as biological and ecological diversity build strong natural systems, Diversity in our restoration and conservation efforts will strengthen our work and our communities.

While the Bay Program partnership has always been open to anyone willing to participate, over the past two years, with the development of the new agreement and its Management Strategies, our teams have actively sought public input on our work from individuals, organizations and communities, some of whom we had not previously engaged. With strong leadership from our Goal Implementation Team and Advisory Committee chairs, we have drawn on expertise from new groups such as the Eastern Brook Trout Joint Venture, the Black Duck Joint Venture, the Landscape Conservation Cooperatives and local governments to help us improve our range of expertise and to increase our understanding of the connections between these natural and human systems, as well as understanding the challenges of local implementation. We need more adult shad to be able to make it upstream – just like we need to re-double our efforts as a partnership to restore this ecosystem.

Through the life of a shad, we have traveled from fresh water streams to salt water marshes and the ocean and back upstream again – touching on many of the goals of the Watershed Agreement, illustrating how each is a critical link – both in the life cycle of the fish but in our collaborative efforts, too. I touched on more than half of the Outcomes for restoration:

- Protected Lands, Healthy Watersheds and Riparian Forest Buffers
- Water Quality, Toxics and Stream Health
- Fish Habitat and Fish Passage
- Wetlands and Underwater Grasses
- Oysters, Crabs and Forage Fish
- Stewardship, Environmental Literacy and Diversity — which are vital to the health of every part of the ecosystem, including our communities.
- An finally Climate Change resiliency

Through this one fish, we can see how every part of the Agreement is connected to every other part and how all are essential if we want Abundant Life, Vital Habitats, Clean Water, and Engaged Citizens that can support and strengthen the Bay watershed's resilience to challenges like Climate Change.

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Through the new Watershed Agreement and the work we've done over the last year, we continue to break down some of the institutional boundaries and bureaucratic barriers that slow our progress. We are building a more collaborative future for the partnership, mirroring the way an ecosystem works in more ways than we have before. The Management Strategies that we present to you today are equally connected and fully integrated with each other, just as the Bay Program management structure and operations have become more integrated and coordinated.

We are currently developing two-year workplans, – which carry over from the Executive Council's vision and decisions made in 2009 to have not only long-term goals, but also short-term targets -- to enable us to measure and report on our progress, to use that information to make adjustments in our approaches and strategies as appropriate through a scientifically rigorous adaptive management process, to hold ourselves accountable to the public, to make our information more accessible and our decision-making more transparent.

In closing, I'll state my belief that the Chesapeake Bay Watershed is one that, although still impaired, shows definite signs of resilience and recovery. Our ever-improving science tells us that it **will** take time for us to see the fruits of our work, just as it took time for the damage to be done and manifest itself. The signs of resilience across the watershed tell us that it's worth our continued dedication and commitment to improve and strengthen our work and to continue to rebuild the natural support systems that will further its recovery and restore the balance of this important ecosystem. Your commitment in signing the 2014 Chesapeake Bay Watershed Agreement provides us with a management and accountability framework, with clearer goals and outcomes, more opportunity for collaboration and coordination, greater accountability and transparency and improved access to the latest science to advance our restoration efforts.

On behalf of the Principals Staff Committee, I have the honor to present to the Executive Council members the Program's final Management Strategies. We look forward now, with your guidance, assistance and support, to implementing them over the next 10 years.

www.chesapeakebay.net/watershedagreement www.chesapeakebay.net/managementstrategies