Chesapeake Bay Program

Science, Restoration, Partnership

2012 State of the Program

CBP Director's Message

At a Glance:

- Restoration Progress in 2011
- CBP's Six Goal Teams and their Accomplishments
- Science, Technical and Reporting advances
- Public Communications Improved
- Understanding 2-Year Milestones

Inside this issue:

This year marks a transition point for the Chesapeake Bay Program (CBP) partnership. The Bay jurisdictions recently finalized and submitted their 2012-2013 Two-Year Milestones and Phase II Watershed Implementation Plans (WIPs). Now we are moving the Bay restoration activities under the Chesapeake Bay Total Maximum Daily Load (TMDL) from planning to implementation, shifting our focus and stepping up our efforts to implement localized Best Management Practices designed to achieve the necessary nutrient and sediment pollution reductions. Principals Staff Committee (PSC) and Management Board (MB) members have been asked to think hard about how we might assist local governments and communities in this effort.

The CBP partners are working to improve both the assessment and communication of progress toward realizing water-quality standards in the Bay and the correlation of progress to actions being implemented for the TMDL. They are developing an integrated approach that includes three primary pieces of information to assess progress toward water-quality standards: reporting of water-quality practices; identification of trends in nitrogen, phosphorus and sediment in the watershed; and, attainment of dissolved oxygen, chlorophyll-a, and water clarity/SAV standards. We are focusing more heavily on the use of actual monitoring data generated as a direct result of our two-year effort to expand the monitoring network in non-tidal areas of the watershed.

We also have begun to apply the Adaptive Management Decision Framework to the CBP Goal Implementation Teams' (GITs) work. The efforts of the Fisheries, Habitat, Water Quality, Healthy Watersheds, Public Access and Conservation, and Leadership and Partnership GITs can be mutually supporting and we are working to identify points of interaction and integration among them. The PSC and MB are interested in this effort which is in keeping with the direction of both the Executive Council and Federal Leadership Committee established under Executive Order 13508.

We know we will face challenges, such as those resulting from last year's unusually wet spring, hot summer and heavy fall rains from Hurricane Irene and Tropical Storm Lee. We also know when we look at our progress over the long term, our efforts to restore the Chesapeake Bay and its watershed are working. We are starting to rebuild resilience back into the watershed ecosystem. We know what needs to be done; we just need to do more of it. It won't be easy or cheap, but it will be well worth the price to save this incredible natural and economic resource.

- Nick DiPasquale

Restoration Progress

Over the last year, the CBP Goal Implementation Teams and their workgroups continued their collaborative efforts to make progress toward a restored Bay. Whether through hands-on work such as grass and forest buffer plantings or less visible efforts such as supporting wastewater treatment plant upgrades and establishing new cross-jurisdictional plans to manage and restore key species such as oysters, brook trout and black ducks, the CBP Teams' actions pervade the restoration efforts across watershed.

In 2011, progress has been notable both for its successes and its challenges. For example, partners continued to plant forest buffers, even though some states met or exceeded their 2010 goals, thereby showing their commitment to improving the health of local waters. Similarly, 148 miles of streams re-opened for fish passage meant hours of studying the potential effects of dam removals on communities and habitats followed by the removal of dams or obstructions themselves, no small task. These kinds of hands-on measures are critical to restoring the Bay.

The "unseen" changes made on the land to reduce polluted runoff play a critical role as well. Between 2009 and 2011, these Teams (that include representatives from the Bay jurisdictions and non-profits) made significant headway, usually through innovative local partnerships, on efforts to reduce the flow of nitrogen, phosphorus and sediment to local streams. They accomplished this through a variety of measures such as upgrades to wastewater treatment plants, installation of comprehensive green infrastructure projects and new efforts on agricultural lands. The value of local successes lies in opportunities for them to be used across various landscapes in the watershed. The value to our waters is that these pollution reducing practices have shown us a way forward in lessening the flow of pollutants to local waters and the Bay.

Restoration Progress in 2011*

Fish Passage
Re-opened **148 miles**
(Total 2,510 miles)

Forest Buffers
Planted **240 miles**
(Total 7,479 miles)

Grasses
Planted **0.02 acres**
(Total 170 acres)

Wetlands
Restored **3,775 acres**

Pollution Loads

(since 2009)

- **Nitrogen**
  Down 15.67 million lbs.
  (To 267 million)
- **Phosphorus**
  Down 0.9 million lbs.
  (To 18.33 million)
- **Sediment**
  Down 396 million lbs.
  (To 8.2 million)

**This listing offers some examples of our 2011 Restoration Progress. Visit www.chesapeakebay.net for more info and to "Track the Progress".*

The Work of CBP Goal Implementation Teams (GITs)

The unique regional CBP partnership brings together leaders and experts from a vast range of agencies and organizations. Each partner uses its own resources to implement Bay restoration and protection activities. Partners work together through the Bay Program's goal teams, workgroups and committees to collaborate, share information and set goals.

Team 1–Sustainable Fisheries

In 2011-12, the **Sustainable Fisheries Team** has focused on the impacts of land use on health and sustainability of fishery resources, a topic that intersects with Healthy Watersheds, Habitat and Water Quality Teams. The Fisheries Team has learned from citizens about the Mattawoman Creek, where a major road project was not permitted in light of fishery needs and is evaluating how to apply lessons learned from this example to other watersheds critical to healthy fishery resources.

Accomplishments:

The Team developed **quantitative metrics that define a scientific basis for evaluating oyster restoration** success. These metrics are being used to evaluate completed projects (Great Wicomico River, Va.) and plan future projects (Harris Creek, Md.). The Team also established inter-agency workgroups in Maryland and Virginia to identify additional priority tributaries. These workgroups will then draft large-scale oyster restoration plans modeled after a blueprint for Harris Creek, Maryland that outlines number of acres needed and cost estimates to achieve success.

The Team adopted an **Invasive Catfish Policy** that sets forth recommendations to reduce negative effects of invasive blue and flathead catfish throughout the Bay. An *Invasive Catfish Task Force*, comprised of fisheries biologists, academics, and resource managers, is developing a set of management options to reduce the spread and harmful impacts of invasive catfish.

Blue crab management is proving successful, with the population rebounding to 763 million, the highest since 1993. Jurisdictions continue to manage blue crab populations using the best available science. Facilitated by the Fisheries team, jurisdictions adopted a new sex-specific abundance target of 215 million female crabs and harvest removal target of 25.5% based on the 2011 blue crab stock assessment. Chesapeake Bay Stock Assessment Committee releases an advisory report this summer detailing current status of the blue crab stock and is developing male reference points to further improve management of the blue crab fishery.

Bay Health

Blue Crab Abundance

763 Million

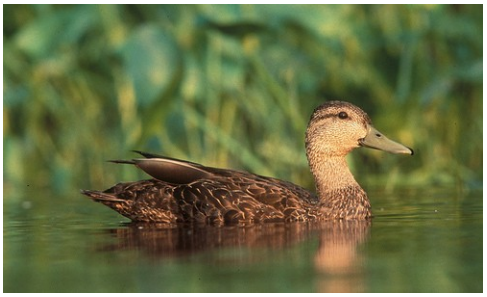
Team 2–Protect & Restore Vital Habitats

The **Habitat Team** is restoring a network of land and water habitats to provide public benefits and support priority species. In June 2011, the Team hosted a workshop at which members and regional experts reviewed analyses of nearly 400 species and sought consensus on a suite of priority species for the Mid-Atlantic. The Team is now using these representative species to simplify the targeting and implementation of habitat restoration projects designed to benefit many species in the region.

Accomplishments:

In 2011-12, significant gains have been made in **biological planning to restore populations of two species**: brook trout and black ducks.

Brook trout are an important recreational resource in the upper portions of our watershed and a key indicator of the health of Bay headwaters. In 2011, brook trout abundance information was collected for most of the Bay watershed. In coordination with the Eastern Brook Trout Joint Venture, researchers have identified groups of contiguous catchments occupied by brook trout. The Team is now working with partners to prioritize streams for restoration and to track progress on this species at a meaningful scale.



Black ducks were once the most abundant dabbling duck in eastern North America. Populations declined 50% between 1950s-1980s due to habitat loss, competition, and other factors. Now the Mid-Atlantic region supports the largest proportion of the continental breeding population. Aerial surveys estimate a 10,000 bird increase from 2007-2009. The Team successfully proposed a **STAC workshop to align the Atlantic Coast Joint Venture's research** on the Bay's carrying capacity for black ducks with coastal habitat restoration targeting. This ensures restoration efforts maximize benefits to this representative species while adapting to climate change.

Bay Health

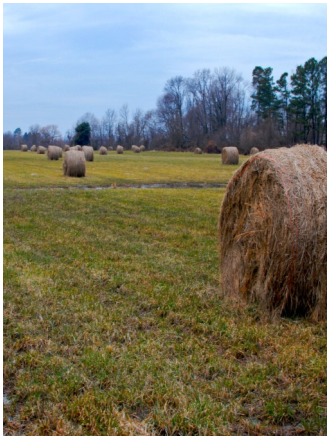
Underwater Grasses Acreage

63,074 (down 16,590)

GOAL TEAMS (Cont'd)

Team 3–Protect & Restore Water Quality

In response to the National Academy of Science review of the Bay Program, the **Water Quality** Team is developing a partnership-wide verification protocol to ensure the practices proposed are properly implemented and maintained. Each sector workgroup is involved since verification will require a different approach from sector to sector. As part of this effort and their ongoing modeling work, the Agriculture, Urban Stormwater, Forestry and Wastewater Workgroups within the team have **conducted reviews of existing and proposed Best Management Practices to decide how to credit their pollution reduction values in the Chesapeake Bay Program models**. Many practices have been working through a review process which will continue through 2012.



The recently-formed Milestones Workgroup has developed the **templates used to communicate progress on nutrient and sediment reductions for the 2009-11 and 2012-13 milestone periods**. The team's other new workgroup, Trading and Offsets, has **created a work plan that lays out a timeline for addressing important CBP partnership topics related to trading and offset programs**.

The Team's Wastewater Workgroup has created **a new supplemental indicator tracking the portion of wastewater facilities that have made upgrades or are otherwise in compliance** with permit limits which meet applicable water quality standards in the Bay. This indicator is now available on www.chesapeakebay.net. This group has also been integral in finalizing the Phase II Watershed Implementation Plans (WIPs) and the milestones.

A decision framework is being developed for the Team, as well as the Urban Stormwater, Agriculture and Wastewater Workgroups. The remaining workgroups will b egin work on this framework in the near future.

The **final Reducing Pollution Indicator**, which incorporates the final 2011 Progress Run, is now available on www.chesapeakebay.net. It was developed based on jurisdictions' data submissions in close coordination with the WQGIT.

Accomplishments:

Over the past year, the Water Quality team members within the seven Bay jurisdictions were integral to finalizing the **Phase II WIPs**, developing **2012-2013 milestones**, and assessing jurisdictions' **2009-2011 milestones accomplishments**. This work supports the accountability framework associated with the Chesapeake Bay TMDL established in December 2010.

Bay Health

Oxygen	34%	(down 4%)
Clarity	5%	(down 13%)
Bottom Habitat	45%	(down 4%)

Team 4 – Maintain Healthy Watersheds

Healthy Watersheds sustain local social, economic and environmental benefits at optimal levels and contribute to achievement of CBP goals for the tidal Chesapeake Bay and tributaries. The focus of this Team is to maintain local watershed health across a range of landscape contexts. With this goal, the Team intends to bring attention to the challenge of protecting streams and watersheds that are healthy today — an approach that complements the "dirty waters" approach which focuses on restoring waters to health *after* they have been degraded.

Currently, the Team is working on a project to create a **system for tracking watershed health and protection status.**

The Team's Communications Workgroup is creating a set of **key messages and actions** to support overall Team's objectives. It is also identifying key audiences the Team wants to reach and key media and other communication opportunities.

Accomplishments: Earlier this year, the Team hosted a **STAC Workshop** titled "The Beneficial Effects of Healthy Watersheds on Pollutant Fate and Transport". Workshop attendees included regional science experts from federal and state agencies, non-profit organizations and universities. Participants examined and discussed whether there is a scientific basis for changing the Chesapeake Bay Watershed Model nutrient and sediment retention/loading rates assigned to natural landscape features based on important attributes such as natural variation within a feature class, anthropogenic degradation, management status, and spatial factors.

Watershed Health

Streams 43%

(fair/good/excellent)

Watershed Health Factors

Population 17.5M (up 182,000)

GOAL TEAMS (Cont'd)

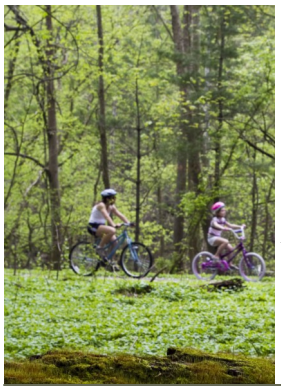
Team 5–Fostering Stewardship

The Stewardship Team and its work groups focused their efforts in four areas last year: development of a land conservation priority system and a watershed-wide public access plan, fostering an increase in citizen stewards of all ages, and creating a watershed-wide environmental literacy strategy for grades K-12.

Accomplishments:

Early in 2011, the Team created an **initial prototype of a land conservation system that** fosters collaborative, strategic land conservation priority setting and implementation**.** Since that time, it has begun working with LandScope America, a free, publicly accessible conservation guide to the U.S., to **further develop the land conservation system** building on work done by some states, including Virginia and Maryland.

An action team was established to develop criteria and a methodology for identifying, documenting, mapping, interpreting, and potentially **conserving indigenous cultural landscapes**. The action team included representatives of American Indian communities as well as state and non profit partners.



As a result of extensive public input and action team collaboration, a **draft of the *Chesapeake Bay Watershed Public Access Plan*** was developed. This plan identifies over 300 potential new access sites, ranks the readiness of the potential new sites for development, identifies gaps in existing public access, and outlines actions for implementation. The draft will be released for public comment this summer.

The Team's Education Workgroup successfully held several workshops and collaborative efforts throughout 2011, resulting in the recently **released Mid-Atlantic Elementary and Secondary Environmental Literacy Strategy**. The comprehensive strategy facilitates coordination of federal programs and resources with state partners.

Look for progress on stewardship later this year at www.chesapeakebay.net

Team 6-Partnering and Leadership

The Partnering and Leadership Team has focused on six areas this year — enhancing meeting management, providing information technology support, implementing adaptive management, improving support to teams via Chesapeake*Stat* and responding to the National Academy of Sciences evaluation.

Accomplishments:

The Team has organized and facilitated online training for the various goal team coordinators and staffers in an effort to **enhance meeting management**.

In order to **provide superior information technology support** the Team has improved CBP information architecture and the flow of program data, led by the data center staff. Enhancements have created better input efficiency and CBP data maintenance.

The Team's Decision Framework Implementation and Chesapeake*Stat* Workgroups continue to support other teams in **implementing adaptive management** through the newly-adopted decision framework. An additional focus for the team has been tracking the program's progress on **governance issues** and implementation of the multi-step "alignment" process.

Individual development leads have worked directly with the other Teams and their workgroups. This has contributed to the CBP response to the adaptive management section of the program's National Academy of Sciences report. The Team leads follow-up for portions of the NAS recommendations.

The Chesapeake*Stat* Workgroup continues to develop and improve the website in **support of all teams' decision-making and to reflect progress** they make with implementation of the decision framework.

Finally, the Team is drafting a response document to the National Academy of Sciences from a Principle Staff Committee request to consider options for addressing the Chesapeake Bay Program's ongoing need for **independent evaluation**. The final product will present options for a possible ongoing evaluation.

OTHER CBP TEAMS

Scientific, Technical, Analysis, Reporting (STAR)

During the last year, STAR has helped coordinate the modeling, monitoring, indicator and information management activities that the Goal Teams need. It has also continued to work with CBP science partners to synthesize information for cross-cutting CBP products.

Accomplishments:

Major functions of STAR in 2011 were significant and varied. To help the Goal Teams prioritize the types and locations of management actions to pursue, STAR provided **access to and coordination of modeling and decision tools** and **monitoring, assessment and indicator development** through increased partnerships.

To further support the Goal Teams' work, STAR pulled together the **evaluation and synthesis for key topics** the Teams identified, a service that explains various factors affecting ecosystem change and the effects of management practices thereon. As always, the group **offered access, shared information and coordinated management of key data and information**. It also continued to serve as **liaison to federal, state, academic and non-governmental organizations** to identify opportunities to address science needs of the Teams. STAR also made a **conscious effort to improve the communications of key findings** by working more closely with CBP Communications. Finally, with STAR's support, the CBP initiated an **expansion of the non-tidal monitoring network**, adding twenty new stations in predominantly agricultural or highly urbanized areas.

Short-term actions to evolve STAR and carry out its revised functions include:

- Establishing team liaisons;
- Convening business, topical and coordination meetings to support the Teams;
- Increasing federal, state, and academic science providers in STAR;
- Evolving its workgroups to address major functions;
- Increasing interaction with Scientific and Technical Advisory Committee (STAC);
- Establishing an annual work cycle to address Goal Teams' science needs.

Watershed Health

Ten Year Monitoring Trends

(2000-2010)

- **Nitrogen loads**

  Down at 50% of sites

- **Phosphorus**

  Down at 33% of sites

- **Sediment loads**

  Up at 75% of sites

Communications Workgroup and Office

If science and collaboration is the heart of the Bay Program partnership, CBP Communications is the circulatory system enabling us to foster internal, cross-team dialogue and collaboration. It is also the body's five senses—sight, sound, taste, touch and feel—delivering CBP's information and knowledge to the world in ways that inspire, engage and educate.

Accomplishments:

Over the last two years, the Communications Workgroup and Office has **improved the internal "circulation" of information within the partnership** by becoming more engaged with the Goal Teams, STAR and the Advisory Committees and actively offering assistance on communications aspects of their various projects. To further this effort in 2011, the Communications Workgroup **established and implemented a Goal Team liaison system** under which a specific workgroup member acts as a two-way street of support and information between the Workgroup and each team. The liaison helps their team consider messages and news items they would like to promote and keeps the Communications Workgroup up-to-date on upcoming relevant announcements and news.

Communications was also integrally involved in creating the new indicator framework and drove the shift to a **more relevant and public-friendly schedule for communicating CBP's scientific information**.

The biggest single achievement for 2011 in the realm of public communications was the **redesign and launch of the CBP website**, www.chesapeakeBay.net. Changes to the site's internal workings make it "light-on-its-feet" and simple to quickly update to meet user needs. Hours assessing web visitation history resulted in dramatically improved navigation that meets users expectations for ease of use and speed. Finally, the **enhanced integration of photos and videos** takes the website from a more static site to one that is contemporary, alive and engaging for the public who expect interactivity and ease in finding what they want.

www.chesapeakebay.net

Communications

(July 2011 to present)

CBP Online Stories	156
Web visits	750,000+
Video views	18,000+

Understanding Progress through Short-Term Milestones

For more than 25 years, the Chesapeake Bay Program has used quantitative metrics to guide our work. They have given us something to strive for, measure against and have driven us forward toward our restoration goals.

In 2008, the Chesapeake Executive Council directed the partnership to take an innovative approach toward improved metrics and accountability, stating that, in addition to long-term goals, the partners would track their progress toward improved water quality through short, two-year, water quality "milestones" or targets, starting with the years 2009 through 2011. Success was to be measured against the end goal of reducing pounds of pollutants entering the region's waters, rather than acres or miles of specific practices put in place, thus allowing for flexibility in how results are achieved. This "common currency" of expected pounds of reduced pollution allowed jurisdictions to establish and implement an initial set of practices that could be adapted if they were less effective than anticipated, provided the original milestones were met.

These first 2009-11 milestones have proven to be valuable, forward-thinking tools for how the CBP adapts and measures its restoration progress into the future. They have allowed the jurisdictions to put forth their strongest efforts while also encouraging them to test which practices work best and which should be changed. In retrospect, they were a critical piece for charting our course for the future, allowing us to manage our work adaptively and learn from our efforts. Rather than simply examining nuances of their success, their value should be recognized in terms of how they have helped the partnership create a new, successful blueprint that looks ahead to our work together toward a restored Bay.

Looking Ahead—2012-13 Milestones

Recognizing that the Executive Council had set the partnership's accountability measures on a reasonable, achievable course, CBP leadership also incorporated atwo-year milestone strategy into the Chesapeake Bay Total Maximum Daily Load (TMDL), the large-scale blueprint for restoring the Bay. Under the TMDL, the first milestone period is 2012 through 2013 and it sets forth specific controls and practices that will be put in place to meet nutrient and sediment reduction targets. In addition, the federal agencies for the first time have developed two-year milestones designed to reduce nutrient and sediment pollution from their facilities located in the Bay watershed. The commitments of the Bay states and the District of Columbia toward achieving their individual milestones now offer a path ahead and reasonable assurance that they will have all pollution-reducing practices in place to meet their interim 2017 targets.

The Chesapeake Bay Program is a regional partnership that has coordinated and conducted the restoration of the Chesapeake Bay since 1983. Partners include the U.S. Environmental Protection Agency; the U.S. Department of Agriculture; the states of Delaware, Maryland, New York, Pennsylvania, Virginia and West Virginia; the District of Columbia; the Chesapeake Bay Commission, a tri-state legislative body; and advisory groups of citizens, scientists and local government officials.