April 1, 2013

Next steps on Toxic Contaminant Goal Setting for the Chesapeake Bay Program (CBP)

Need for Toxic Contaminant Goal: As the Chesapeake Bay Program (CBP) revises their partnership goals for a new Bay Agreement, reducing the effect of toxic contaminants on fish and wildlife needs to be included because:

- The CBP is required to address toxic contaminants under of the Clean Water Act language that established the program. Reference Title II of the Clean Water Act Chesapeake Bay Restoration SEC. 117.g.1.C "…ensure that management plans are developed and implementation is begun by signatories of the Chesapeake Bay Agreement to achieve and maintain … the Chesapeake Bay Basinwide Toxins Reduction and Prevention Strategy goal of reducing or eliminating the input of chemical contaminants from all controllable sources to levels that result in no toxic or bioaccumulative impact on the living resources of the Chesapeake Bay ecosystem or on human health"

Results from a recent report (*Technical Report: Toxic Contaminants in the Chesapeake Bay and its Watershed: Extent and Severity of Occurrence and Potential Biological Effects*, December, 2012) on the extent and severity of toxic contaminants and their potential biological effects in the Bay and its watershed found:

- 72% of the Bay and its tidal water segments are fully or partially impaired as a result of toxic contaminants.
- Fish consumption advisories due to toxic contaminants restrict the amount of striped bass (and other valuable species) that are caught and eaten.
- The health of fish continues to be degraded as indicated by: (1) increased infectious disease and parasites causing fish kills, (2) feminization (intersex conditions) of largemouth and smallmouth bass, (3) reduced reproductive success of yellow perch, and (4) and tumors in bottom-dwelling fish. All of these effects are likely to be related to the effects of toxic contaminants.
- In a few locations, contaminants adversely affect the health of wildlife, primarily birds, as evidenced by: (1) eggshell thinning, (2) death of embryos, and (3) failure of eggs to hatch.
- Some of the most widespread contaminant groups include PCBs, mercury, PAHs, and herbicides.

Even with previous progress made as a result of the CBP Toxic 2000 strategy, the report findings demonstrate that toxic contaminants still affect the health of fish and wildlife, thereby reducing the recreational and economic value to the 17 million people in the watershed. The President's Chesapeake Executive Order strategy called for the recent report and its findings to be used in 2013 to develop toxic contaminant reduction goals.

Initial Feedback from CBP groups on developing a new goal and outcome. Based on presentations of the report findings to different CBP groups (WQ GIT, Fisheries GIT Executive Board, CAC, FOD, and STAR), some of the suggestions for setting a toxic contaminant goal and outcome(s) include:

- Addressing the effects of toxic contaminants is worth considering if it does not take away from efforts to implement the Chesapeake Bay TMDL (stated by the MD, DC, DE representatives of the

Water-Quality Goal Team). The CBP could let existing state programs and local TMDLs address toxic contaminants (PA and NY representatives on the WQ GIT).

- Work with different WQ GIT workgroups to address a particular contaminant group that may be reduced through nutrient and sediment water-quality practices.
- Focus the goal to address the effects of toxic contaminants on the health and economic value of Bay fisheries (Fisheries Goal Team Executive Council), such as reducing the number of fish consumption advisories in the Bay.
- Review current federal and state efforts to reduce toxic contaminants to help focus a CBP specific goal.
- Prioritize goals/outcomes to focus on contaminant groups that have the most widespread extent and severity.

Next Steps:

- Establish working group/action team by April 10, 2013 to develop options for CBP partnership to consider for a toxic contaminant goal and outcomes in the new Bay agreement.
- Working group could be led jointly by EPA and the CBP Water Quality and Fisheries Goal Teams since all of these groups have responsibilities to address the effects of toxic contaminants on fish and wildlife. The group/team would provide options to be considered by CBP Water Quality and Fisheries Goal Teams and federal agencies (through the Federal Office Directors). Options would move forward to MB and PSC as the new Bay agreement is considered by the CBP.
- Membership would include EPA, FWS, NOAA, and State/DC agencies which have management responsibilities for health of fish and wildlife and reducing the effect of toxic contaminants; STAR (for monitoring and research support), and other interested parties.

Suggested options for goal and outcomes. There are two primary options for a toxic contaminant goal:

1. Have a water-quality goal that incudes reference to meeting water-quality standards related to the Chesapeake Bay TMDL and reducing toxic contaminants. Example language could be: "Restore water quality to achieve standards for DO, clarity/SAV, and chlorophyll-a related to Bay TMDL *and reduce the effect of toxic contaminants in the Bay and its watershed*".

2. Have separate water-quality goals for (a) the Bay nutrient/sediment TMDL and (b) toxic contaminants. Potential language for the two separate water-quality goals could be:

(a) "Restore water quality to achieve standards for DO, clarity/SAV, and chlorophyll-a in the Bay and its tidal waters as articulated in the Chesapeake Bay Total Daily Maximum Load (TMDL)"

(b) "Reduce inputs of toxic contaminants to improve the health of fish, wildlife, and their supporting habitats and reduce human health risk due to consumption of contaminated fish".

A more detailed outcome(s) for toxic contaminants would be developed under either of these goal options. An outcome could be related to fish consumption advisories, an example would be: "Reduce the number of fish consumption advisories due to toxic contaminants by xxx percent in the Bay watershed by 2025" Other options are to have an outcome related to addressing different contaminant groups (see Appendix 1 for more discussion).

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Decisions requested from Water Quality and Fisheries Goal Teams:

1. Identify people to serve as leaders or members of the team to develop the toxic contaminant goal and outcome(s).
2. Give initial feedback on preference for options for a goal (combined with Bay TMDL or separate goals for TMDL and toxic contaminants).
3. Provide any other additional ideas for a goal and associated outcome(s).

Appendix 1. Some of the future ideas for strategies to reduce toxic contaminant groups with widespread occurrence include:

PCBs:

- Look at Toxic Loading Inventory to see which sources are the most prevalent. However, we will have to determine how up to date and sufficient the information is for the Chesapeake.
- Compile information on existing EPA Programs (TSCA, Clean Air Act, Clean Water Act, RCRA, and CERCLA, State).
- Assess if current programs (listed above) are being utilized by the CBP partners to remove impairments due to PCBs. If these are insufficient, develop additional actions.

Mercury

- Assess if the National mercury rules and state rules are sufficient to reduce the number fish consumption advisories in the Chesapeake Bay and its watershed (Follow up with John Sherwell (MD DNR) assess).
    - If not, are there additional sources we need to consider to reduce Hg beyond regulatory outcomes?

Pesticides

- Focus on currently used pesticides and less on those pesticides already banned.
- Consider working with WQ GIT AG workgroup to: (a) discuss current nutrient and sediment management strategies, identify high-risk areas to fisheries and what could be the potential targeting of additional BMPs to reduce nutrients, sediments, and agricultural pesticides (suggested by Bill Angstadt, Md. Grain Producers).

In addition to the above there is a need for supporting science and research to further address the occurrence and extent of toxic contaminants and their effects on fish and wildlife. More specific items were in the Dec 2013 report.

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