Kick-Off Meeting!
Toxic Contaminants Workgroup

November 5, 2014

CBP 2014 Agreement

VISION

The Chesapeake Bay Program partners envision an environmentally and economically sustainable Chesapeake Bay watershed with clean water, abundant life, conserved lands and access to the water, a vibrant cultural heritage and a diversity of engaged citizens and stakeholders.

Toxic Contaminants Goal

Ensure that the Bay and its rivers are free of effects of toxic contaminants on living resources and human health.

Contaminants Research Outcome

- Continually increase our understanding of the impacts and mitigation options for toxic contaminants.
- Develop a research agenda and further characterize the occurrence, concentrations, sources and effects of mercury, PCBs and other contaminants of emerging and widespread concern.
- In addition, identify which best management practices might provide multiple benefits of reducing nutrient and sediment pollution as well as toxic contaminants in waterways.

Policy and Prevention Outcome

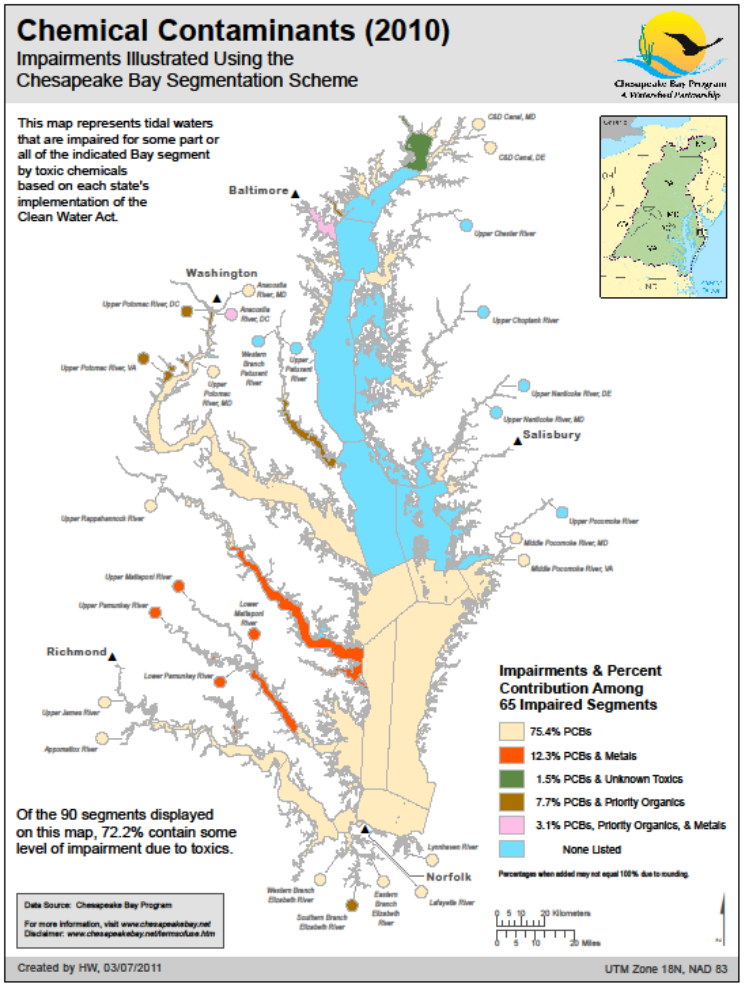
- Continually improve practices and controls that reduce and prevent the effects of toxic contaminants below levels that harm aquatic systems and humans.
- Build on existing programs to reduce the amount and effects of PCBs in the Bay and watershed.
- Use research findings to evaluate the implementation of additional policies, programs and practices for other contaminants that need to be further reduced or eliminated.

Executive Order Report

Contaminants report issued January 2013

Report and Objectives

- Contaminants affect fish and wildlife
- CBP Toxics 2000
- Existing conditions/new issues
- EO Strategy
- Summary Report released
  - Extent and severity
  - Biological effects
- Used by EPA and CBP to consider:
  - Goals for reducing contaminants
  - Monitoring and research

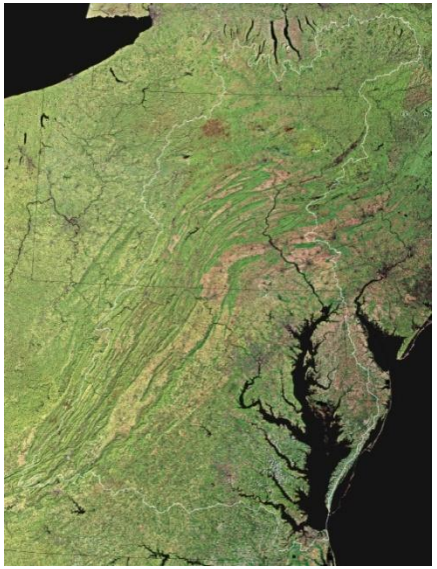


Contaminant Groups

- Polychlorinated biphenyls
- Dioxins and Furans
- Polycyclic aromatic hydrocarbons
- Petroleum hydrocarbons
- Pesticides
- Pharmaceuticals
- Household and Personal Care Products
- Polybrominated diphenyl ether Flame Retardants
- Biogenic hormones
- Metals and Metalloids

- Effects on fish and wildlife

Assessment Approach



- Define extent and severity
  - Widespread, localized, or uncertain
  - Information used and limitations
- Extent
  - Widespread: throughout watershed
  - Localized: limited watersheds
- Severity
  - Widespread: impairments listed at many locations
  - Localized: few locations
- Uncertain: lack of monitoring or standards

Extent

- Widespread:
  - PCBs, PAHs, Mercury
  - some herbicides (atrazine, simazine, metochlor, and their degradation products)
- Localized:
  - Dioxins/furans, petroleum hydrocarbons
  - Insecticides (aldrin, chlordane, dieldrin, DDT/DDE, heptachlor epoxide, mirex)
  - Metals: Al, Cr, Fe, Pb, Mn, Zn
- Uncertain: pharmaceuticals, care products, flame retardants, some pesticides, hormones

Severity

Widespread: PCBs and mercury

Localized:

– dioxins/furans, PAHs, petroleum,

– Insecticides: aldrin, chlordane, dieldrin, DDT/DDE, heptachlor epoxide, mirex

– Metals: Al, Cr, Fe, Pb, Mn, Zn

Uncertain:

– pharmaceuticals, care products, flame retardants, biogenic hormones

– herbicides (atrazine, simazine, metolachlor, and their degradation products)

Biological Effects

- Degraded fish health
  - Infections and parasites
  - Feminization
  - Reduced reproduction
  - Tumors
- Wildlife: Reproductive impairment in water birds
  - Eggshell thinning (DDE)
  - Embryo lethality (pesticides)
  - Hatching success (PCBs)

Monitoring and Research Gaps

- Monitoring to better define extent
  - Groups with “uncertain” or “localized” occurrence
- Research-Severity
  - Exposure studies
  - Multiple contaminants and stressors
  - Effects of newer contaminants
  - Sources, pathways and exposure

Conceptual Framework for Toxic Contaminants Outcomes

Ten contaminant groups

Research to determine occurrence, concentrations, and effects

Prioritized contaminants for prevention and reduction strategies

- PCBS
- Mercury?
- Other groups based on research findings

Sources

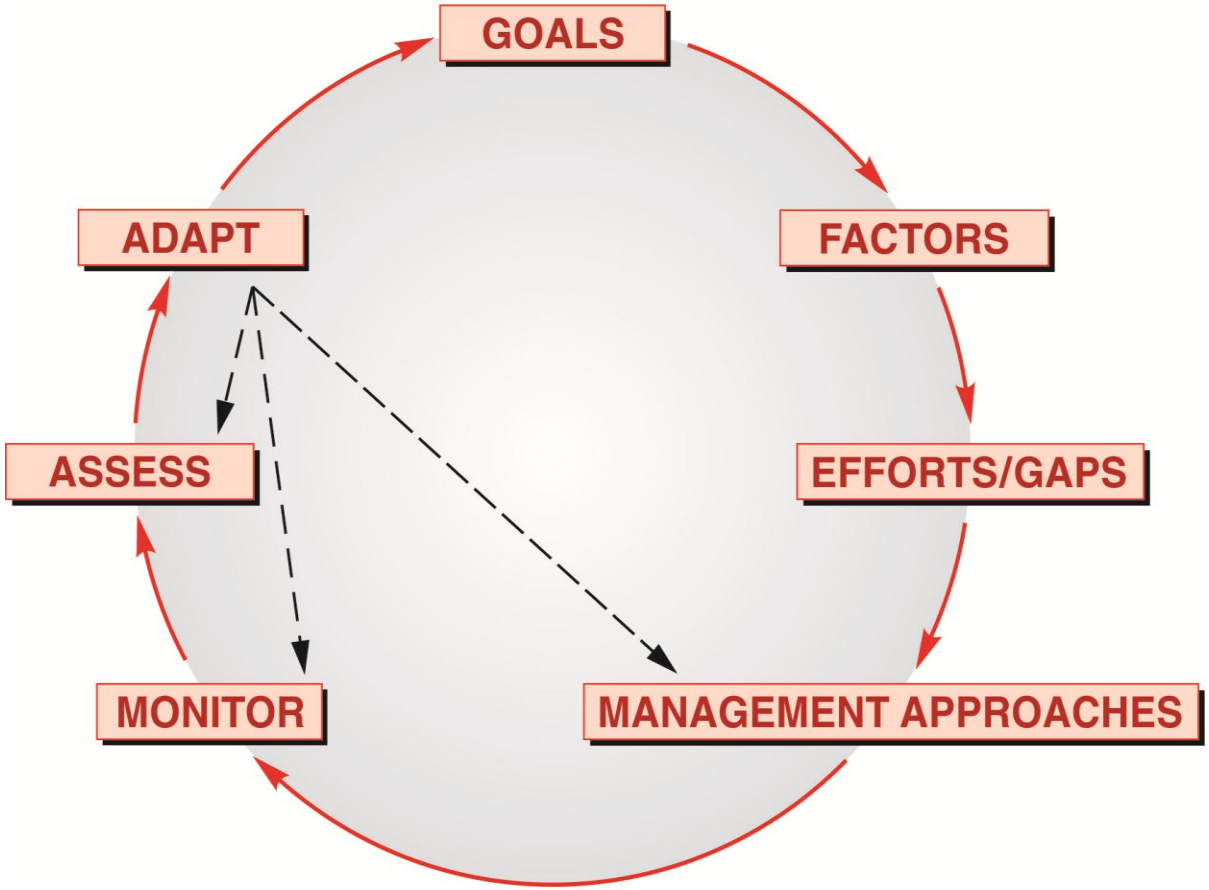
Management Strategies

- Released by June, 2015
- Draft for public comment, March 2015
- Elements:
  - Outcomes/baselines
  - Factors
  - Current efforts and gaps (partners participating)
  - Management approach
  - Monitoring progress
  - Assessing progress
  - Adaptively manage
  - Biennial workplan

Management Strategies

ADAPTIVE MANAGEMENT FOR THE CHESAPEAKE BAY PROGRAM

(CBP, 2011)



Objectives for Breakouts

- Begin discussion of content for management strategies
- Focus on factors affecting goal achievement, baselines, current efforts and gaps
- Determine sources of information and other input needed
- Process going forward