Research Outcome

Management Strategy and Work Plan for Toxic Contaminant Research: *Status and Items for 2020*

Toxic Contaminant Workgroup
February 2020

Contaminant Groups and Strategies

Widespread Severity and Occurrence

PCBs → **Policy/Prevention Strategies**

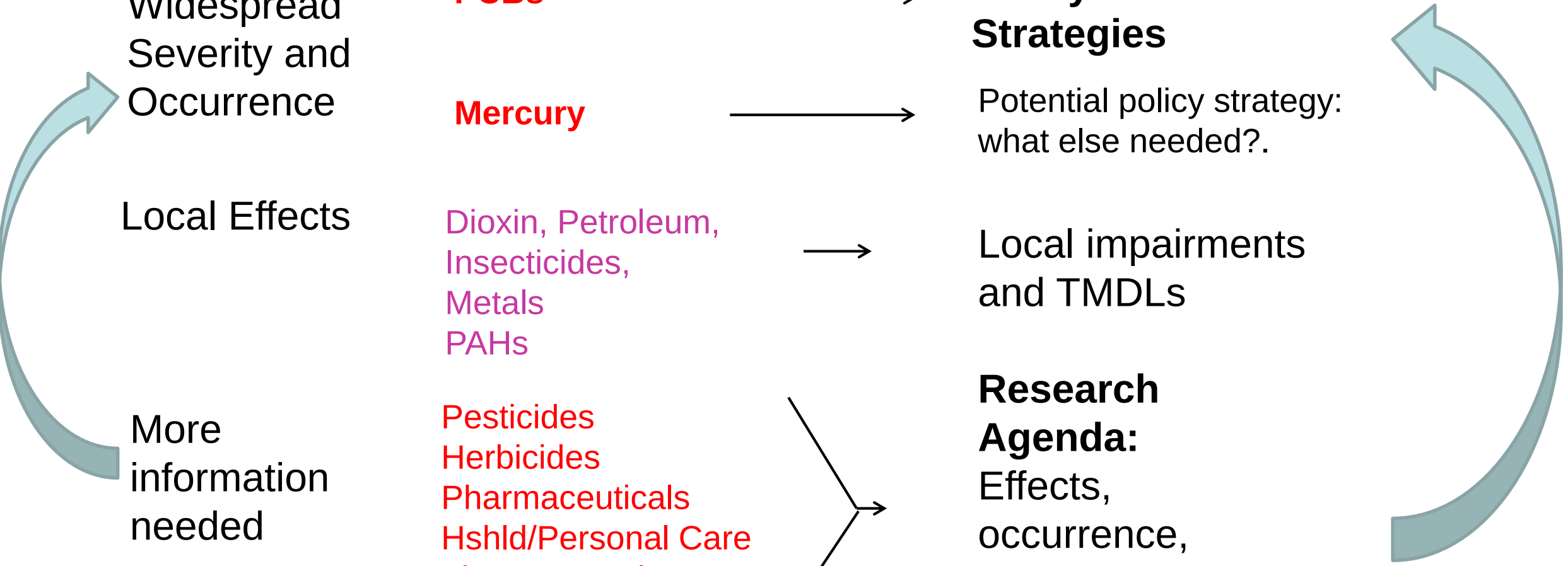
Mercury → Potential policy strategy: what else needed?.

Local Effects

Dioxin, Petroleum, Insecticides, Metals PAHs → Local impairments and TMDLs

More information needed

Pesticides
Herbicides
Pharmaceuticals
Hshld/Personal Care
Flame Retardants
Biogenic Hormones → **Research Agenda:** Effects, occurrence, sources, Co-benefits



Current Issues for Strategy and Work Plan

(1) Fish and shellfish safer for human consumption;

(2) Contaminants degrading the health, and contributing to mortality, of fish and wildlife;

(3) Occurrence, concentrations, and sources of contaminants in different landscape settings;

(4) Science to help prioritize options for mitigation to inform policy and prevention; and

(5) Issues of emerging concern

Fish and shellfish safer for human consumption;

What we completed:

- Generated information on mercury to understand whether further Chesapeake Strategies are needed
- Science to support PCB policy and prevention including improving understanding of sources and fate, best practices for trackback studies, reduction efforts

Ongoing and left to do:

- Mercury data inventory (*ongoing*)
- Inventory any ongoing progress on PCB modeling
- PCB status and change in environment through 1668A method use

What we learned?

Contaminants degrading health and contributing to mortality of fish and wildlife;

What we completed

- Assess effects of contaminants on fish and shellfish in tidal waters (several items)
- Document fish health conditions in Bay watershed

Ongoing and left to do

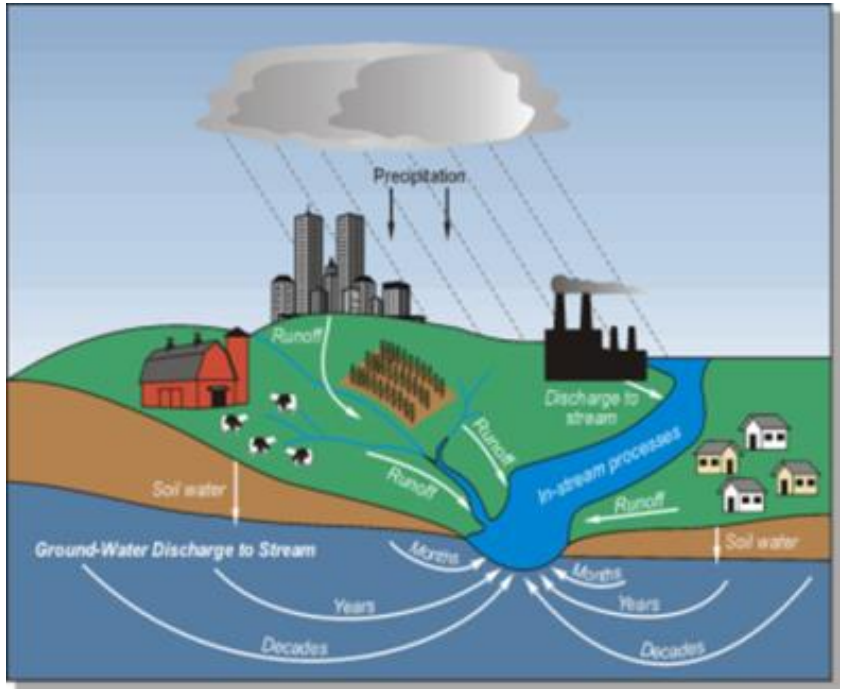
- Interact with state and federal wildlife service agencies to assess priority needs related to contaminant effects on wildlife

What have we learned?

Occurrence, Concentrations, and Sources

What we completed

- Definition of EDCs and other toxic contaminants in ag settings, WWTP (briefings and publications)
- GIS identification of hotspots
- More use of state/academic activities



Ongoing and left to do

- Contaminants in different settings
  - Urban
- Co-occurrence with nutrient and sediments
- Evaluate outcomes from Anacostia sediment project to improve understanding of contaminants other than PCBs
- Loading rates of priority toxic contaminants for possible use in CBP tools

Implications for mitigation, and co-benefits with nutrient and sediment reduction

What we completed

- Summarized information about direct and co-benefits of mitigation, identified needs (STAC workshop report)
- Interaction with WQ GIT and teams

Ongoing and left to do

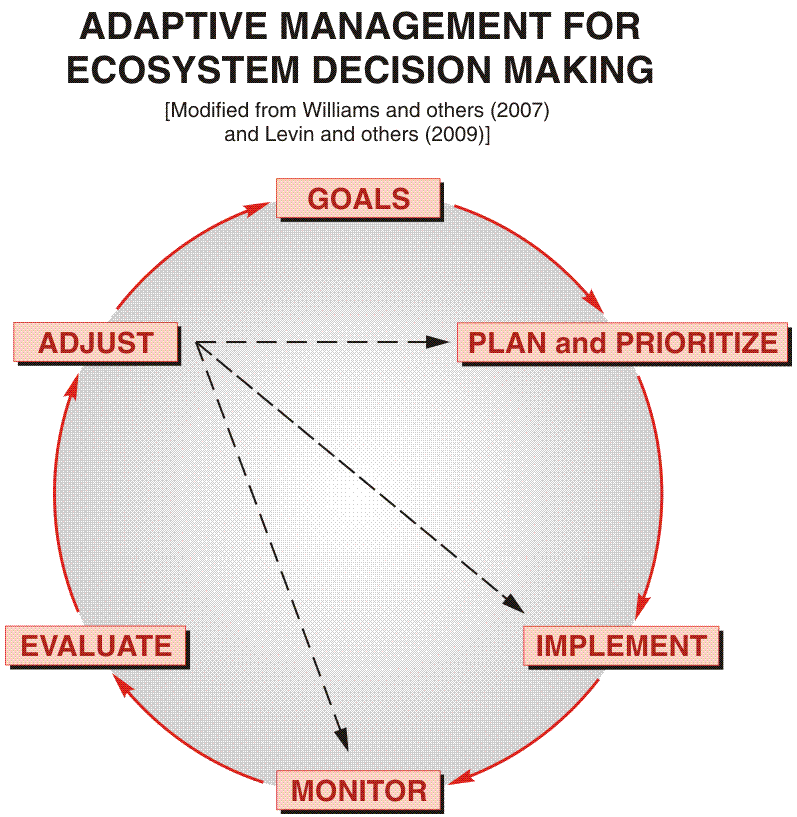
- Explore use of CBP tools (CAST)
- EDC synthesis and implications
- Continue to summarize and inventory information about BMP effectiveness for toxic contaminants

What have we learned?

Issues of Emerging Concern

What we completed

- Microplastics update
- HABs
- PFAS
- Road Salt/choride
- Coal ash
- UV filters, hormones, antibiotics

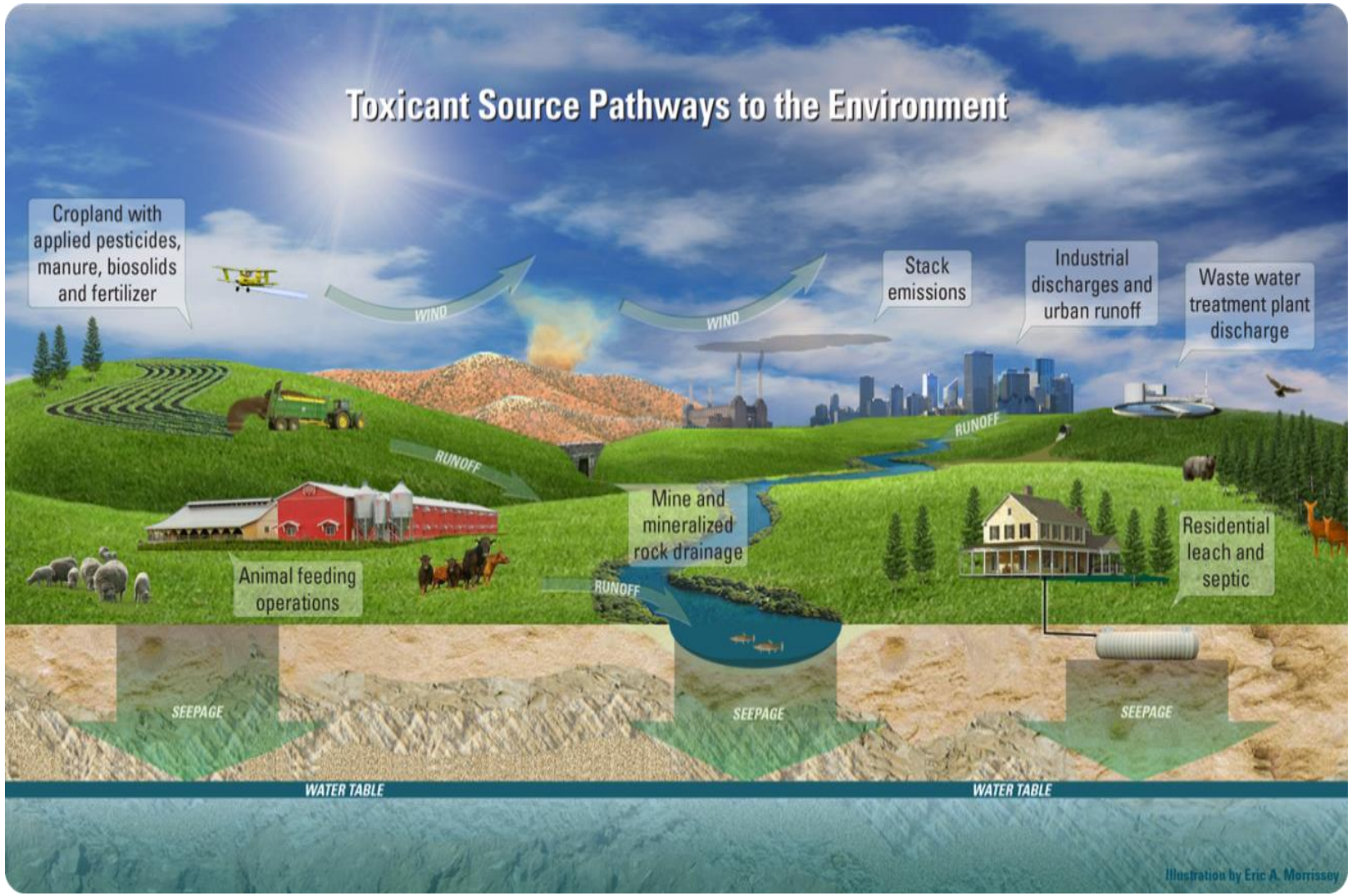


Ongoing and left to do

- Aggregate/analyze recent regulations and management approaches outside the watershed related to UV filters, hormones and antibiotics to help inform strategies within CB

Moving Forward: Next Steps

- Determine what will be finished in 2020
- What have we learned?
- Use to potentially update management strategy
- Update logic table and action plan for 2021-22



Science for Policy and Prevention

What we completed

- Refine and improve understanding of PCB sources to inform CM of PCB fate (continue)
- Communicate lessons learned from innovative monitoring devices, and assess changes over time through the TMDL implementation plan progress (continue)
- BMP effectiveness for removal of toxic contaminants (continue)
- Communicate ongoing results of the investigations of PCB reduction in biofiltration and enhanced of media in stormwater controls to promote removal of PCBs
- Communicate results of completed research study investigating the PCB content of wastewater biosolids and effluent in an urban WWTP. Ongoing studies of fat-oil-and-grease (FOG) deposits as potential source of PCBs in aging gray infrastructure.

Ongoing and left to do

- Inform status and changes in environmental conditions through the use of the 1668 congener-based analytical method
- Explore feasibility of including qualitative scoring tools into BMP implementation scenarios in Phase 6 CAST (initiated)
- Estimate data needs to include toxic contaminant reduction associated with the implementation of BMPs for sediment and nutrient reduction under the Chesapeake Bay TMDL (e.g., assessment of data needs for CAST)
- Collaborate with other source sector groups to identify projects and topics for co-benefit reduction of PCBs with nutrients and sediment reductions (planned STAC workshop briefings)