

# PCB TMDLs in the Delaware Estuary: DRBC's Development and Implementation Plan

Thomas J. Fikslin, Ph.D., Manager  
Modeling, Monitoring and Assessment Branch

New Jersey Water Environment Association  
2013 Annual Conference



# Presentation Outline

- ✓ Background
- ✓ NPDES Permitting Strategy
- ✓ Other Implementation Plan Elements
- ✓ Goal and Path Forward

# The Problem Reiterated

- A long-term strategy for permitting point source discharges and addressing non-point sources such as contaminated sites and air sources is needed to gain acceptance by stakeholders and ensure continued progress in reducing PCBs.
- In view of the uncertainty in data on PCB concentrations in point source discharges, need for additional PCB model refinements, and uncertainty in treatment technologies, implementation of Stage 1 TMDLs was unconventional.

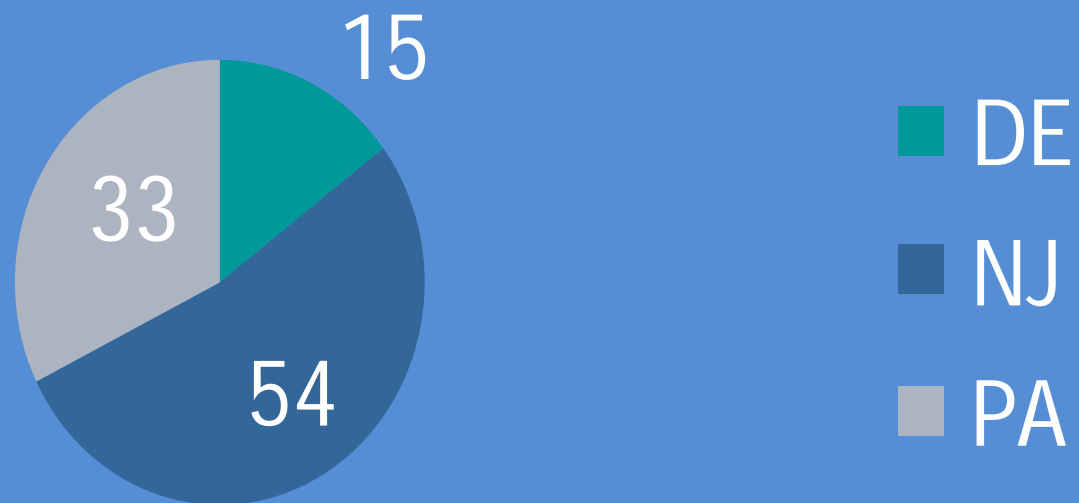
# Stage 1 Implementation

- Utilize non-numeric effluent requirements.
- Stage 1 TMDLs Implementation:
  - ❄ Monitoring for 209 PCB congeners using Method 1668A.
  - ❄ Requirement for the development and implementation of Pollutant Minimization Plans or PMPs.

**Effective for  
10 Years**

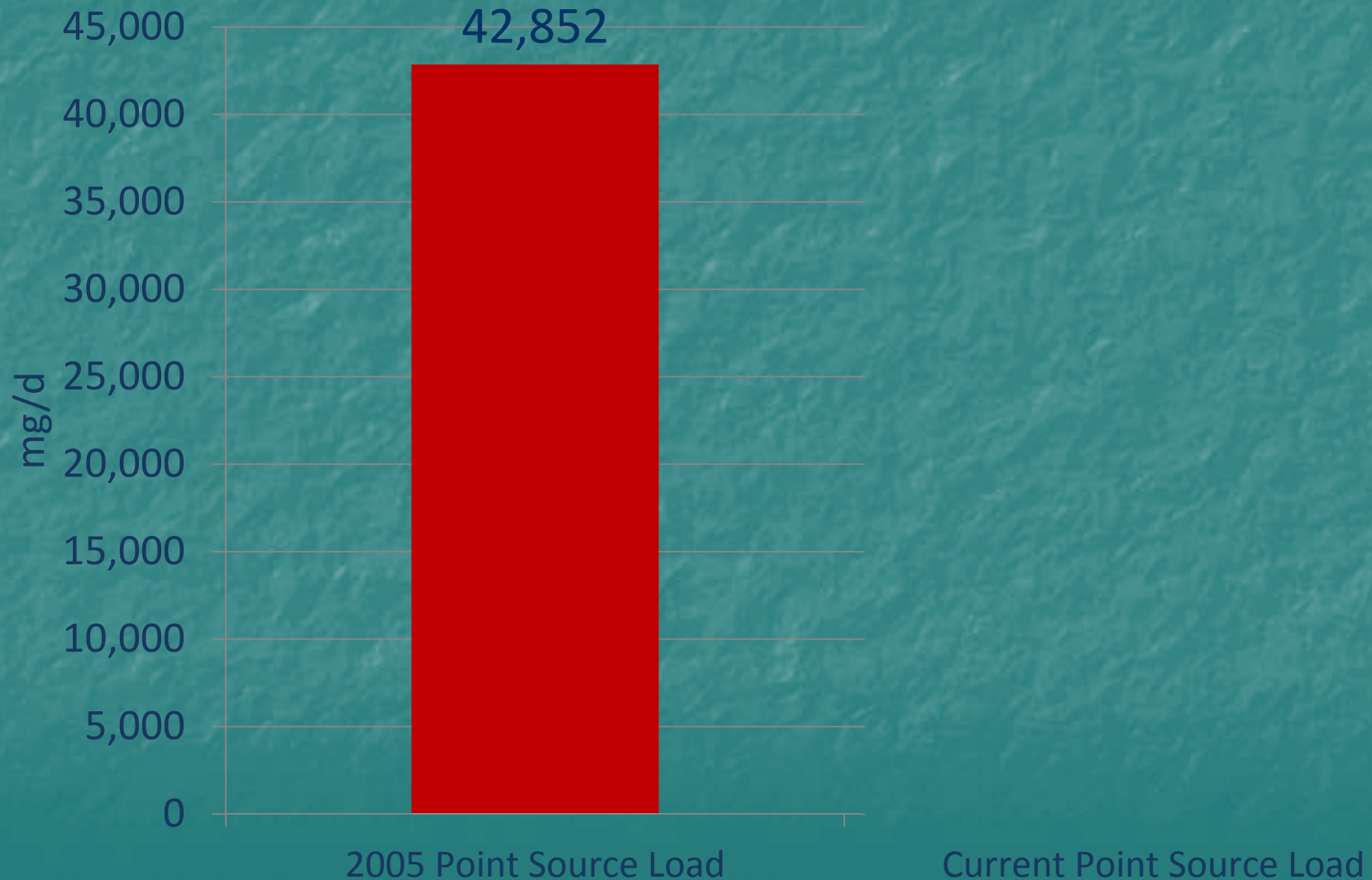
# NPDES Dischargers included in PCB TMDLs

## Number of Dischargers

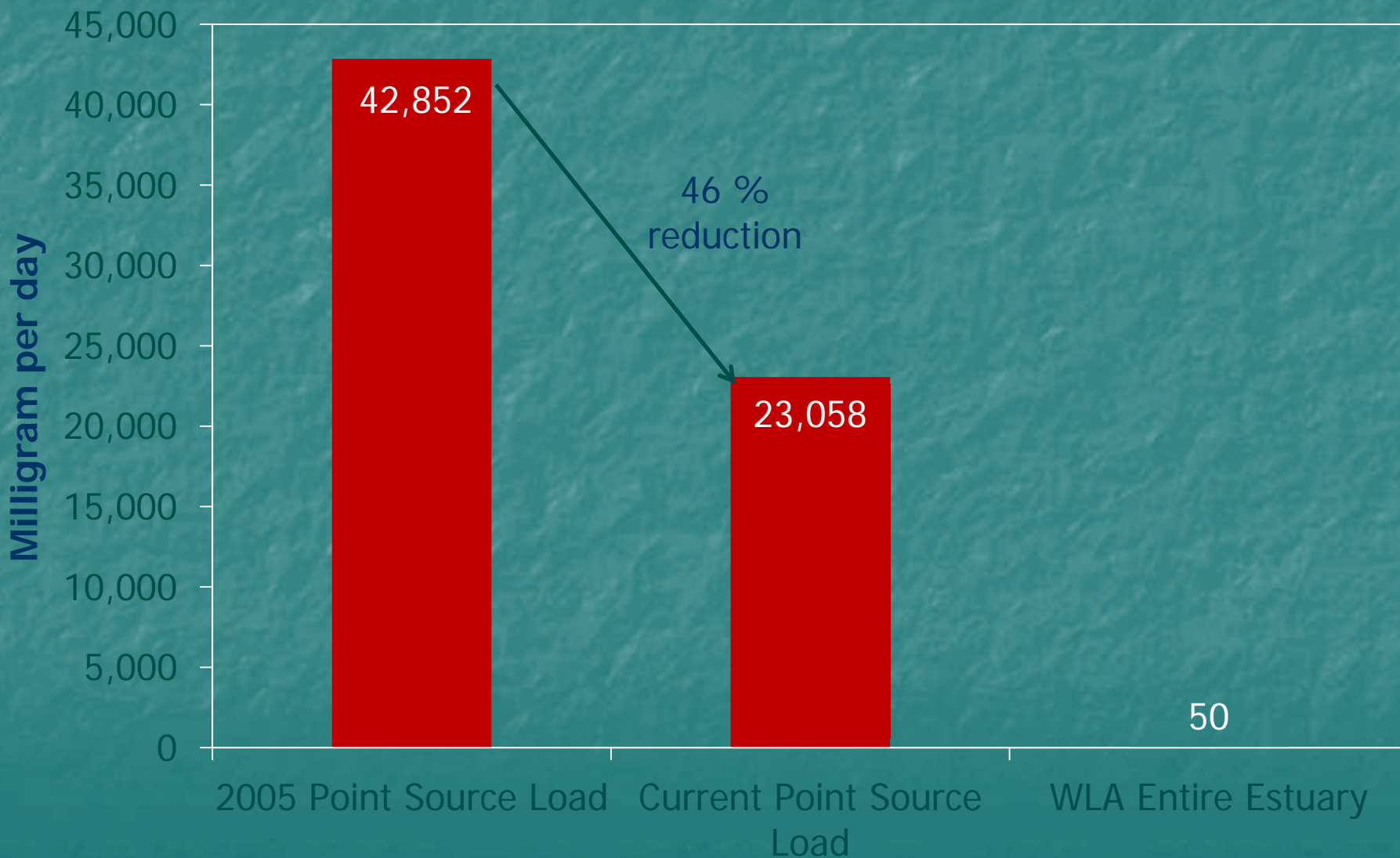


Total number of dischargers = 102

# 10 Dischargers Representing 90% of Point Source PCB Loadings in the Estuary



# 10 Dischargers Representing 90% of Point Source PCB Loadings in the Estuary



# Stage 2 TMDLs and Implementation

- Stage 2 TMDLs are needed to:
  - Update the basis of the TMDLs - the WQ criterion,
  - Utilize a new, more equitable wasteload allocation procedure agreed upon by stakeholders,
  - Utilize an improved PCB water quality model.
  - Include an implementation strategy for point and non-point sources as an Appendix to the Stage 2 TMDL report.
  - Provide certainty to this process.



# Presentation Outline

- ✓ Background
- ✓ NPDES Permitting Strategy
- ✓ Other Implementation Plan Elements
- ✓ Goal and Path Forward

# Elements of NPDES Permitting Strategy

1. Provisions to ensure that each discharger attains its Stage 2 TMDL wasteload allocation (WLA) as soon as possible including:
  - a. A requirement to develop and implement a PMP.
  - b. A provision that the Permitting Agency will establish elements of the PMP as enforceable requirements of the permit.
  - c. An **Action Level** based upon Existing Effluent Quality (EEQ).

# Elements of NPDES Permitting Strategy (cont.)

2. The permit must also include **the more stringent of any technology-based requirements for TSS** in compliance with 40 CFR Parts 122.44(a)(1) and 125.3, or the DRBC effluent quality requirements.
3. A requirement for monitoring and reporting using a sensitive sampling and analytical method – Method 1668A or the latest subsequent revision.

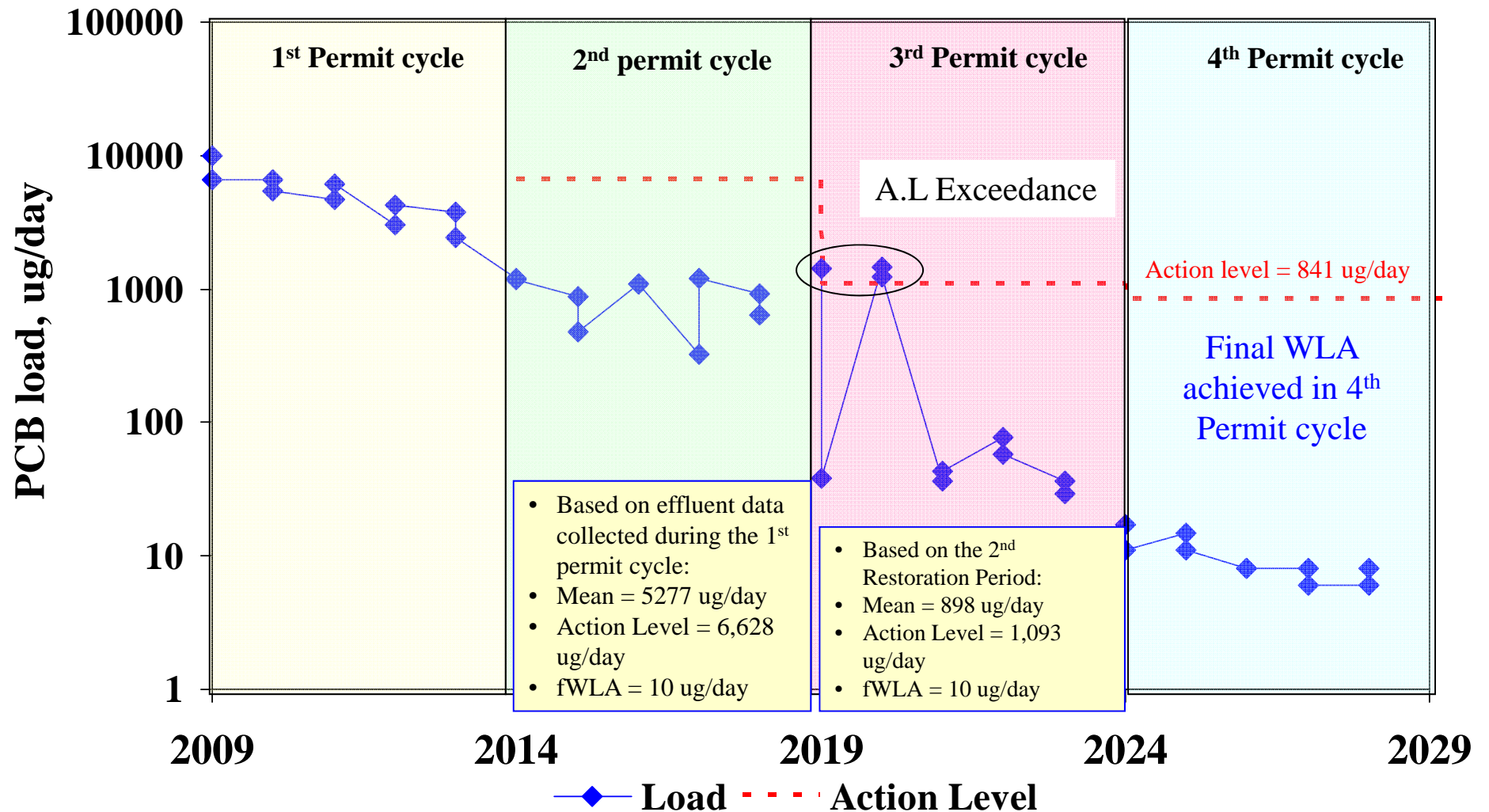
# Elements of NPDES Permitting Strategy (cont.)

4. A requirement to submit a revised PMP if the permitting agency determines that the PMP will not likely achieve the maximum practicable reduction of pollutant discharges.
5. A requirement that the permit holder submit a **PMP Progress Report to accompany an updated PMP as part of the 5-year permit renewal application.**

# Elements of NPDES Permitting Strategy (cont.)

6. A requirement that monitoring, reporting, PMP requirements, and the EEQ Action Level remain in place until the discharger's wasteload allocation (WLA) is achieved, after which monitoring, reporting and a numeric effluent limit (consistent with the permittee's WLA and the policies of the permitting authority) will apply.

# Pseudo PCB loading Trend for Discharger "X"



# Presentation Outline

- ✓ Background
- ✓ NPDES Permitting Strategy
- ✓ Other Implementation Plan Elements
- ✓ Goal and Path Forward

# Other Proposed Elements of the Implementation Strategy

- DRBC to conduct Zone-wide and estuary-wide assessments of cumulative changes in ambient water, sediment and fish tissue; and in effluent PCB levels periodically (every 5-10 years) to measure cumulative progress.
- EPA will evaluate the implementation approach no less frequently than every ten years.



# Other Proposed Elements of the Implementation Strategy

## □ Non-Point Sources

- Strategies for addressing NPSs were included in the 2009 TMDL Implementation Plan publically noticed by DRBC.
- The strategies focus on identifying and prioritizing sources of PCBs in each non-point source category described in the plan.
- Existing authorities would be utilized to focus on water quality impacts and achieve the load allocations assigned to these sources.

# Other Proposed Elements of the Implementation Strategy

## □ Non-Point Sources

- The plan specifically addresses the categories of tributaries and boundaries, contaminated sites and air sources.
- Loadings assigned to tributaries and boundaries would be included in TMDLs established for those water bodies. Ex. - Schuylkill River and non-tidal Delaware River above Trenton.

# Presentation Outline

- ✓ Short History
- ✓ NPDES Permitting Strategy
- ✓ Other Implementation Plan Elements
- ✓ Goal and Path Forward

# PCB Human Health WQ Criterion

- ❑ In October 2000, the U.S. EPA issued a revised methodology for deriving human health water quality criteria. The Commission's TAC recommended that this new methodology be used.
- ❑ In March 2003, the Commission directed staff to develop revised human health criteria based upon this new methodology.
- ❑ In December 2005, the Commission directed the Executive Director to proceed with rulemaking on a revised PCB criterion of 16 pg/L.

# PCB Human Health WQ Criterion

- Five factors are utilized in the new methodology:
  - ① Risk-specific dose,
  - ② Body weight,
  - ③ Drinking water intake per day,
  - ④ Fish intake at various trophic levels, and
  - ⑤ **Bioaccumulation factor** at each trophic level.
- All three states bordering the estuary have adopted a criterion of 64 pg/L.
- Adoption of a criterion of 16 pg/L for Zones 2 - 6 by the DRBC will result in a uniform criterion across the estuary.

# Goal and Path Forward

- Path Forward:
  - DRBC will propose adoption of the revised PCB water quality criteria for the protection of human health of 16 pg/L.
  - EPA Regions 2 and 3 will publically notice the proposed establishment of Stage 2 TMDLs.
- Establishment of the Stage 2 TMDLs will provide the mechanism for describing the path forward to achieve our common goal.

# Contact Information:

[thomas.fikslin@drbc.state.nj.us](mailto:thomas.fikslin@drbc.state.nj.us)  
(609) 477-7253

Information on the TMDLs, model development, sampling and analytical information, and PMP requirements and resources are available on the DRBC website at:

<http://www.state.nj.us/drbc/quality/toxics/pcbs/>

