

2008 Peconic River Monitoring Report Highlights

Community Advisory Council Briefing

September 10, 2009

*William Medeiros
Environmental Protection Division*

BROOKHAVEN
NATIONAL LABORATORY

a passion for discovery



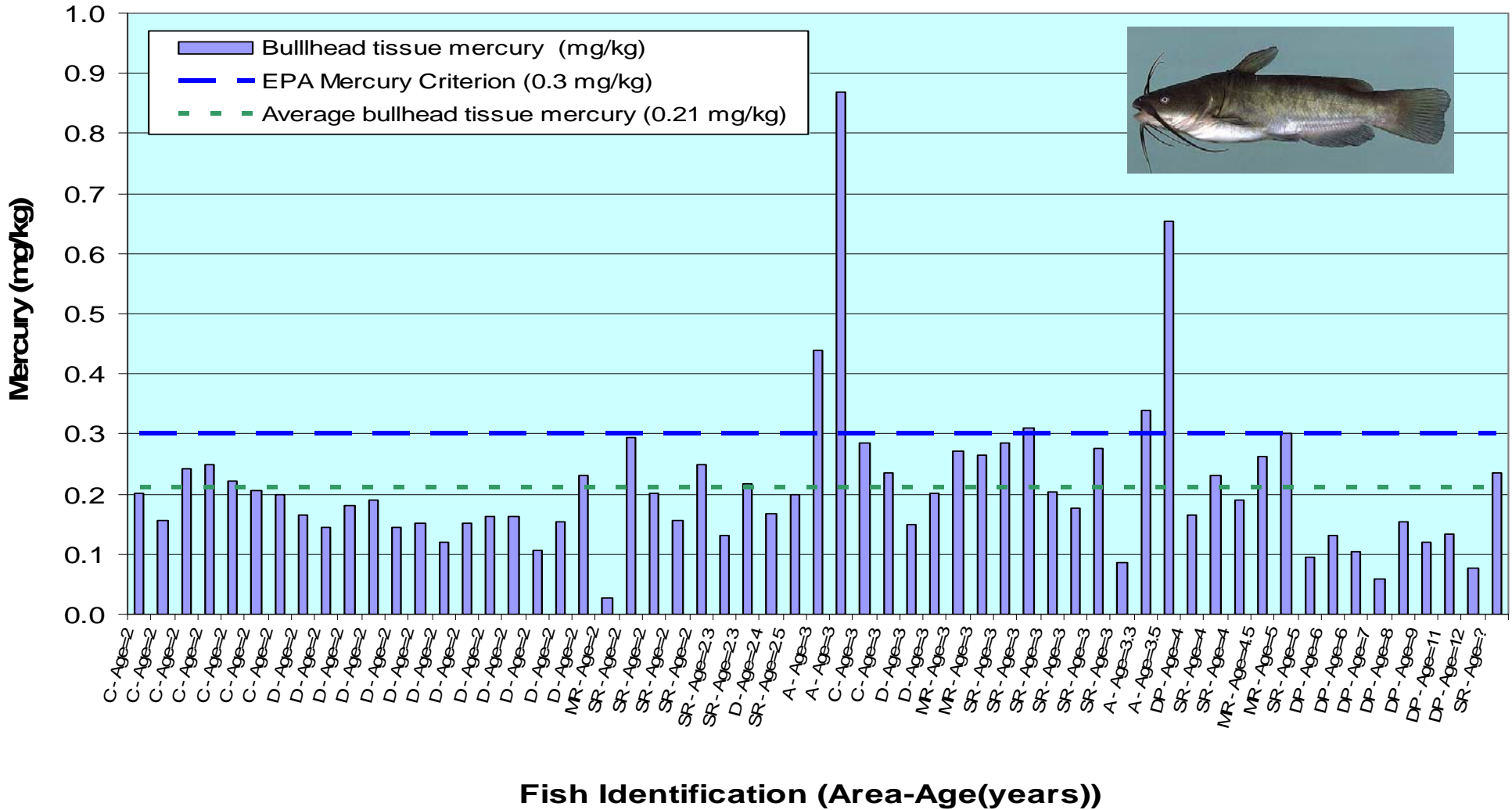
Agenda

- Review of 2008 Annual Monitoring Results (CAC 6-11-09)
 - Sediment – Review 2008 Routine and Supplemental Highlights
 - Surface Water – 2008 Highlights
- Fish – Review 2008 Mercury Highlights
- 2008 Wetlands Highlights
- Sediment Trap Removal

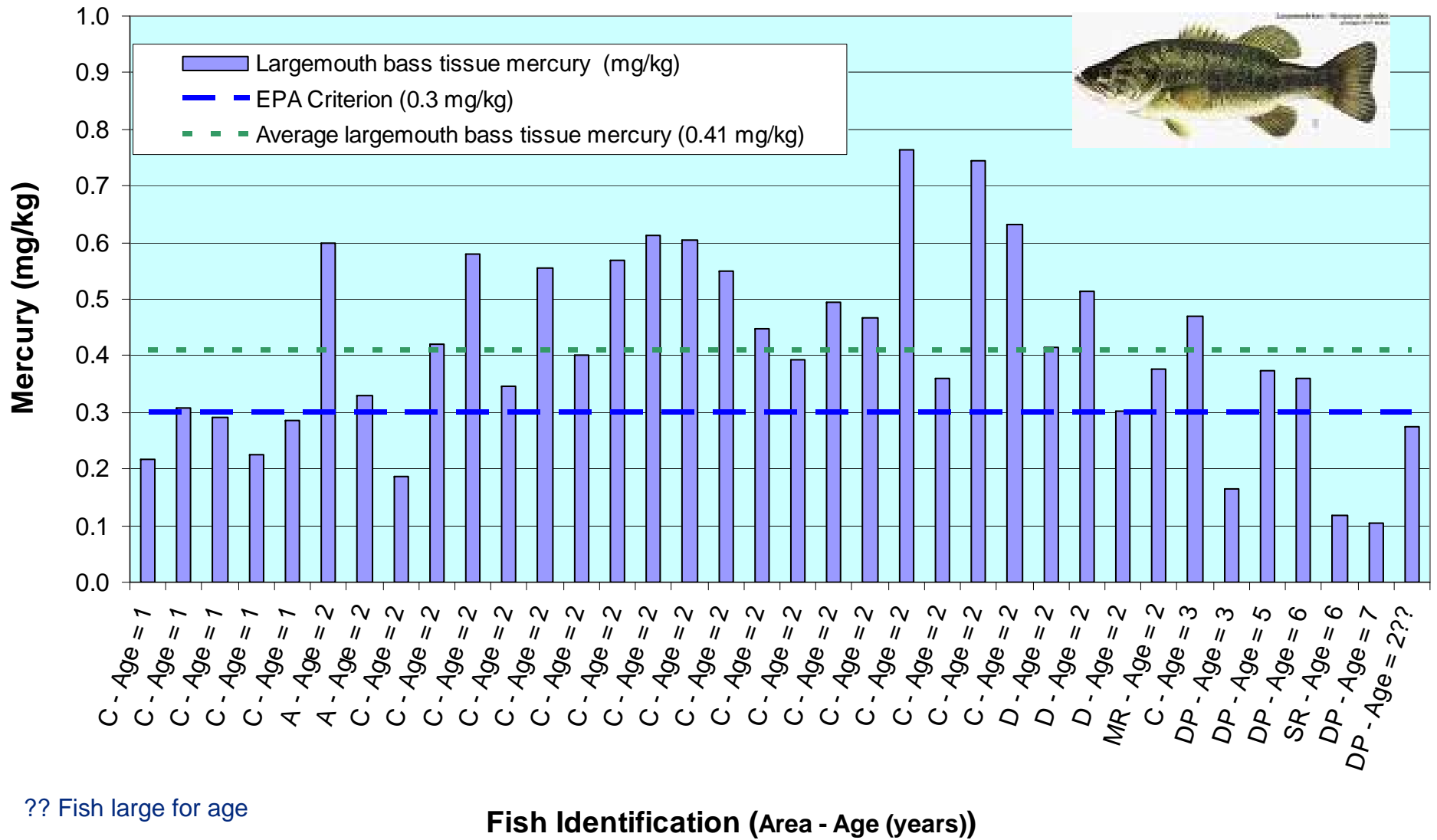
Review of 2008 Sediment and Surface Water Data

- 29 of 30 routine sediment stations less than 2.0 mg/kg mercury
 - Onsite average = 0.48 mg/kg mercury (ROD: less than 1.0 mg/kg)
 - PR-SS-38 = 2.1 mg/kg (ROD: less than 2.0 mg/kg)
 - Offsite average = 0.37 mg/kg (ROD: less than 0.75 mg/kg)
- 2008 sediment samples confirm elevated mercury in PR-SS-15 Area
 - **BNL/DOE has initiated planning with regulators for sediment remediation in PR-SS-15 area**
- **Surface water total mercury concentrations decline with distance downstream of STP**
 - **STP effluent mercury is higher than upstream of STP**
- **Surface water methylmercury concentrations decline with distance downstream of BNL border**

2008 Peconic River Brown Bullheads - Mercury (Sorted by Age - Area - Length)



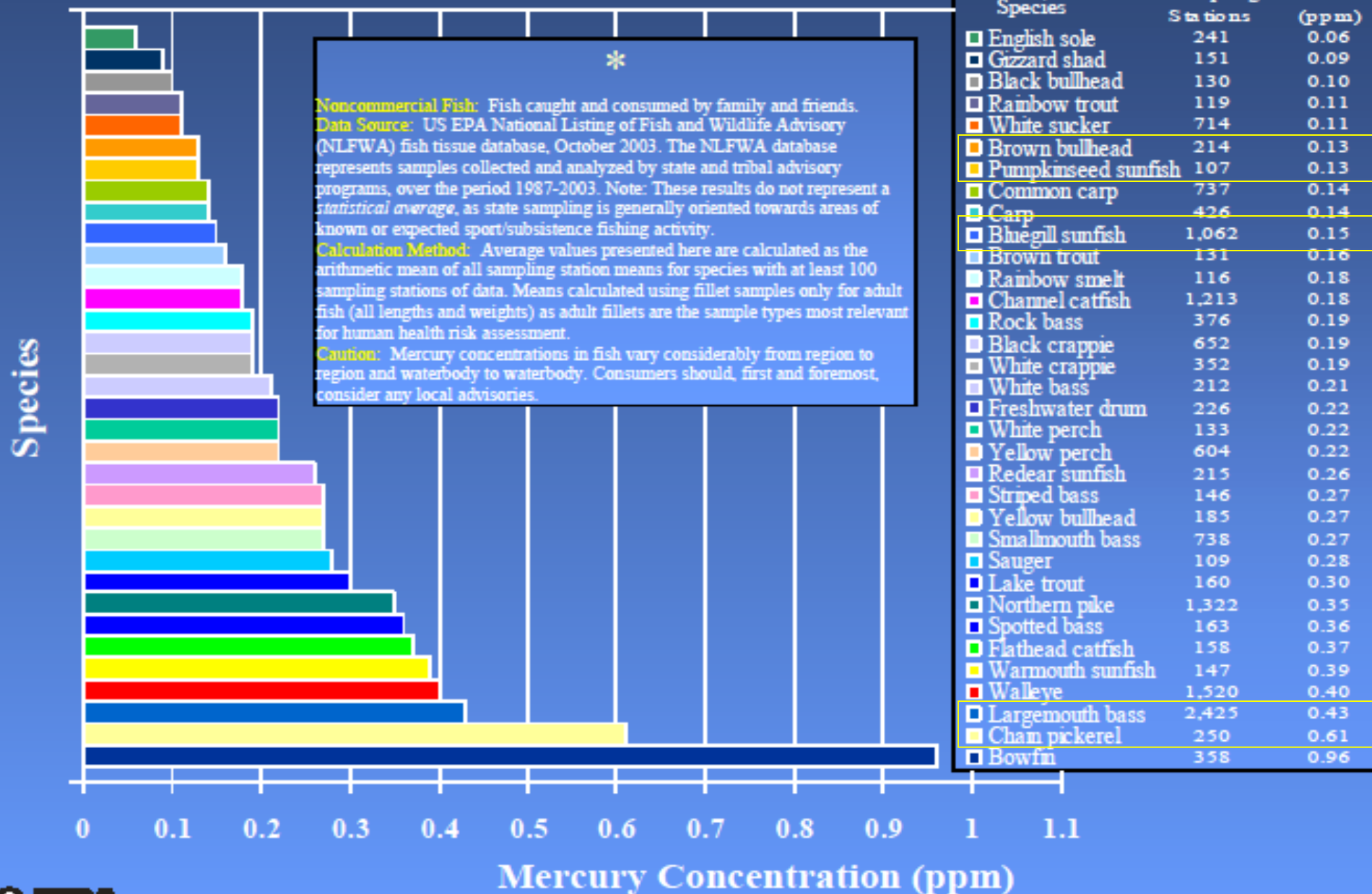
2008 Peconic River Largemouth Bass - Mercury (Sorted by Age - Area - Length)



?? Fish large for age

Average Tissue Mercury Concentrations in Noncommercial Fish*

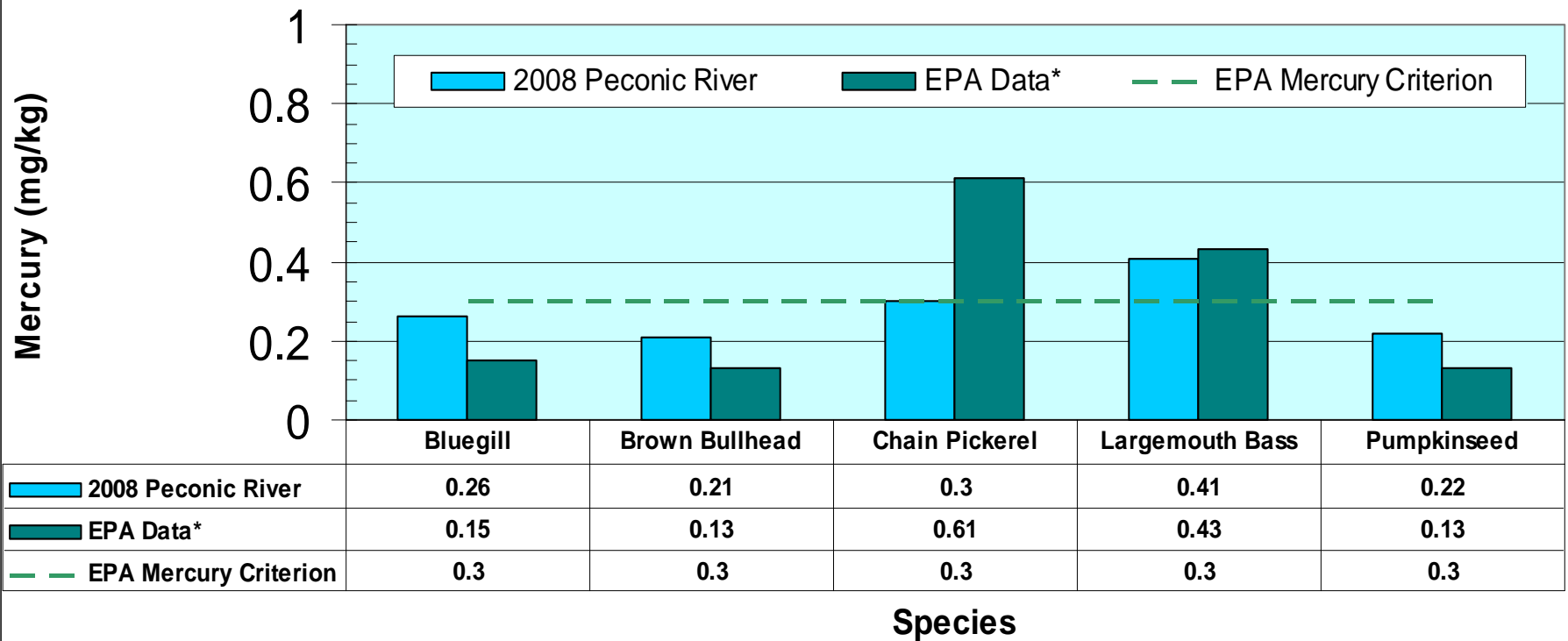
*Source: <http://www.epa.gov/waterscience/fish/advice/tissue-slide.pdf>



Average Fish Mercury Concentrations

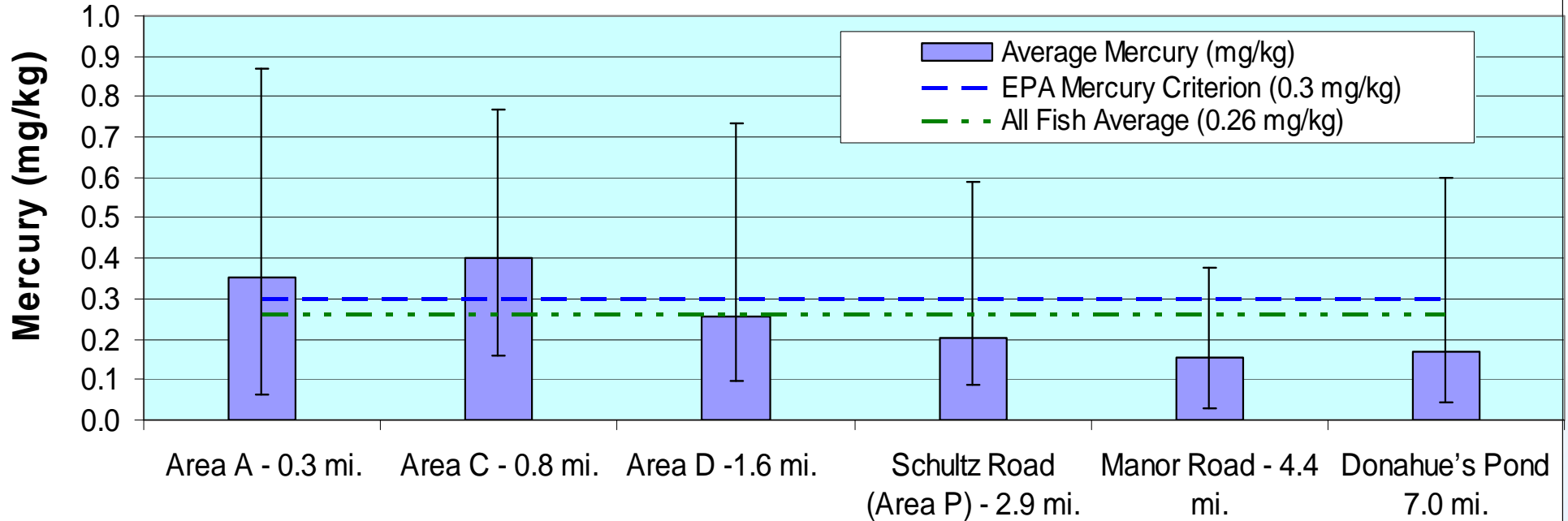
Peconic River (2008 data) and EPA* (1987-2003 data)

*Source: <http://www.epa.gov/waterscience/fish/advice/tissue-slide.pdf>



2008 Peconic River

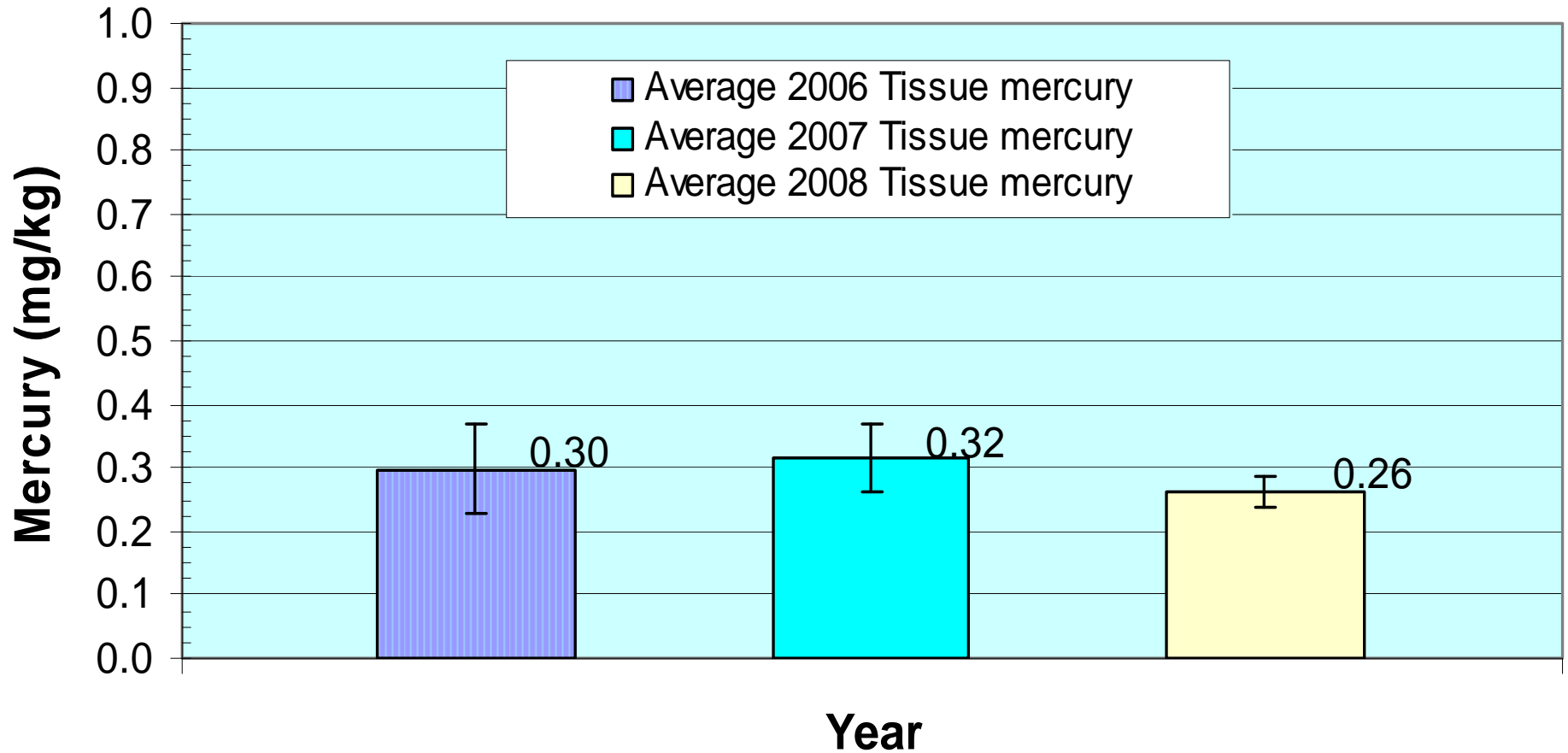
Average Fish Tissue Mercury by Area



Collection Area and Approximate Downstream Distance
 (Error Bars show the minimum and maximum for each location.)
 Distance is from BNL STP to mid-point of fish collection area.

Ageing Fish: BNL/DOE will continue to age fish through 2010. Ageing fish beyond 2010 will be based on the usefulness of the 2008, 2009 and 2010 age data.

2006 to 2008 Peconic River Average Fish Tissue Mercury Concentrations



Error bars represent the 95 percent confidence limits of the mean.
(arithmetic mean = arithmetic average).

2008 Wetlands Highlights

- **New York State wetland permit requirements, including invasive species, were met in 2006 and approved in 2007.**
- **Federal invasive species monitoring and control requirements were met in 2008.**

Sediment Trap

- ROD requires sediment trap to be removed due to impediment to fish migration

Sediment Trap Request

- BNL/DOE requested and received DEC approval (2009) to remove the trap during low water conditions
 - to minimize operational costs, and
 - to minimize potential dispersion of entrained contaminated sediment.
- **BNL/DOE Developing Draft Removal Plan:**
 - Recommend removal during low water conditions.
 - Approximately 40 cubic yards of stone rip-rap, followed by characterization of un-remediated sediment.

Sediment Trap Water Levels

*Too high for
removal*



*Ideal
for removal*



Discussion