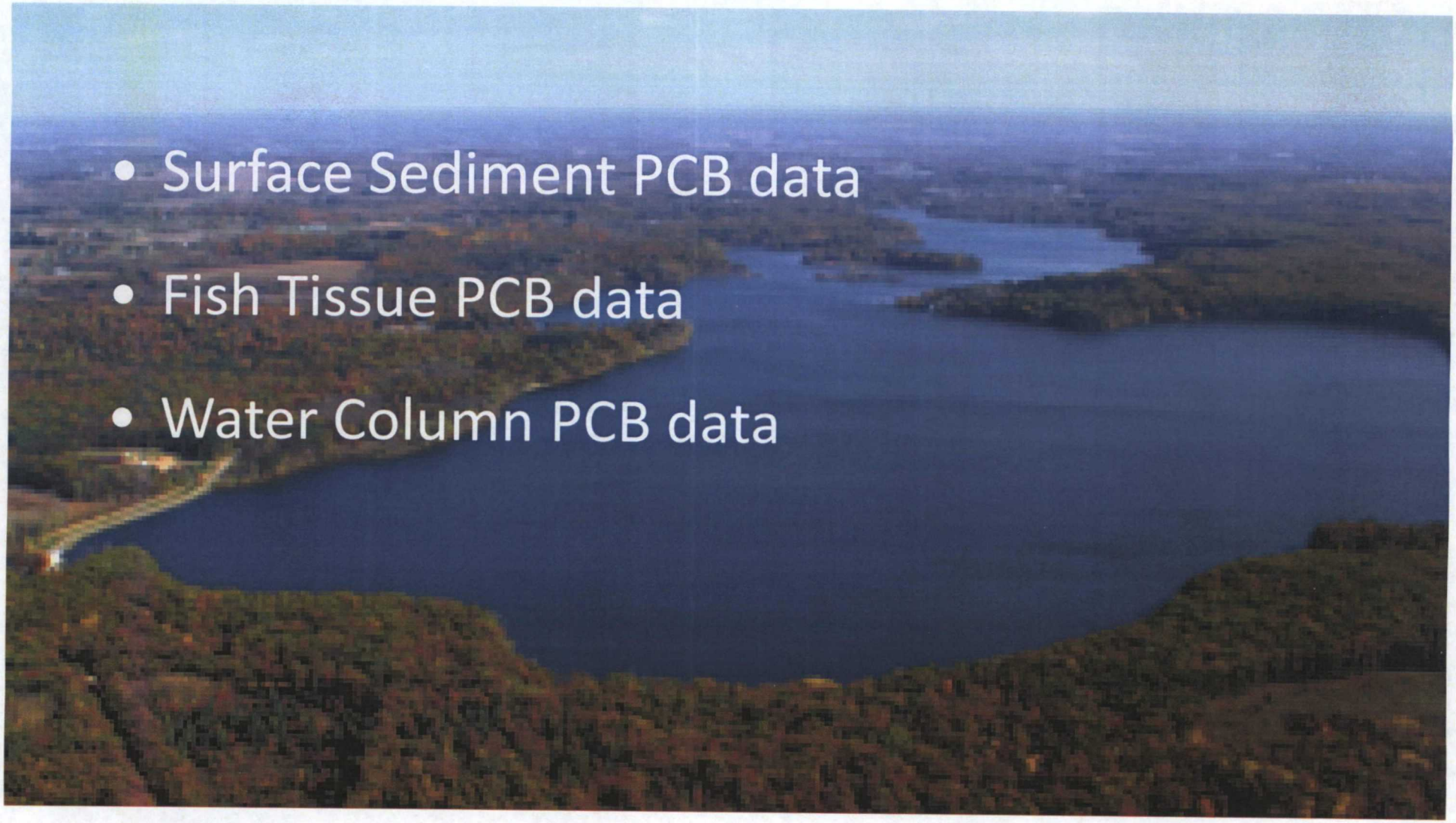
US EPA RECORDS CENTER REGION 5
474020

Nov. 29, 2010

Lake Allegan Data Update



- Surface Sediment PCB data
- Fish Tissue PCB data
- Water Column PCB data

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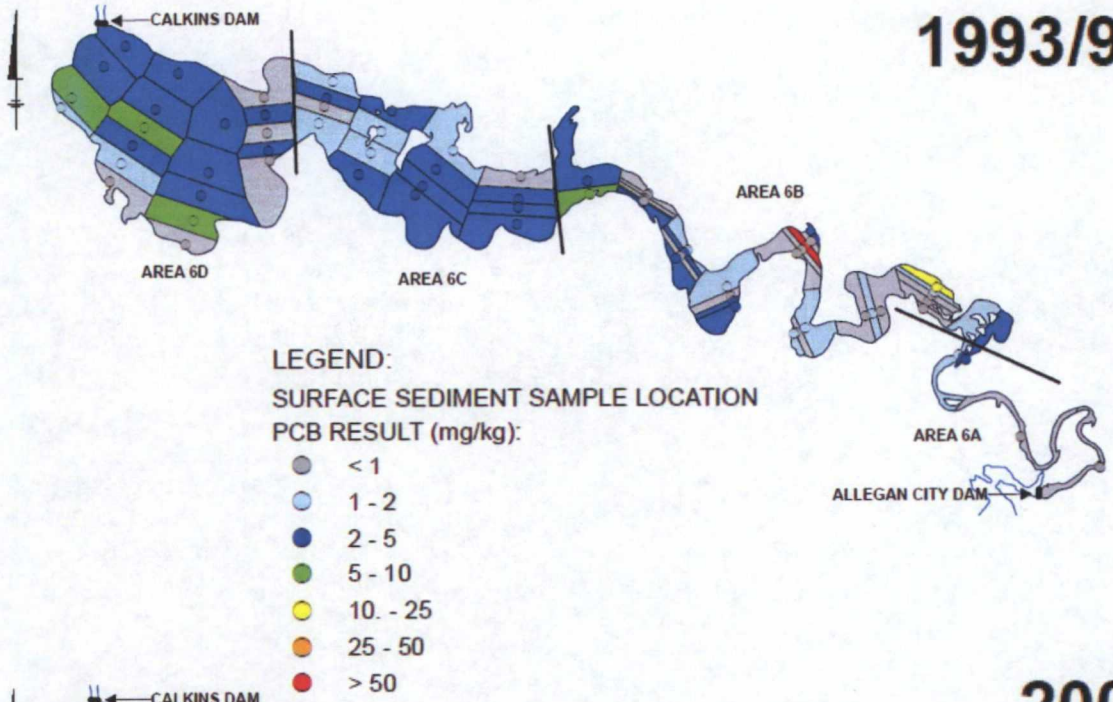
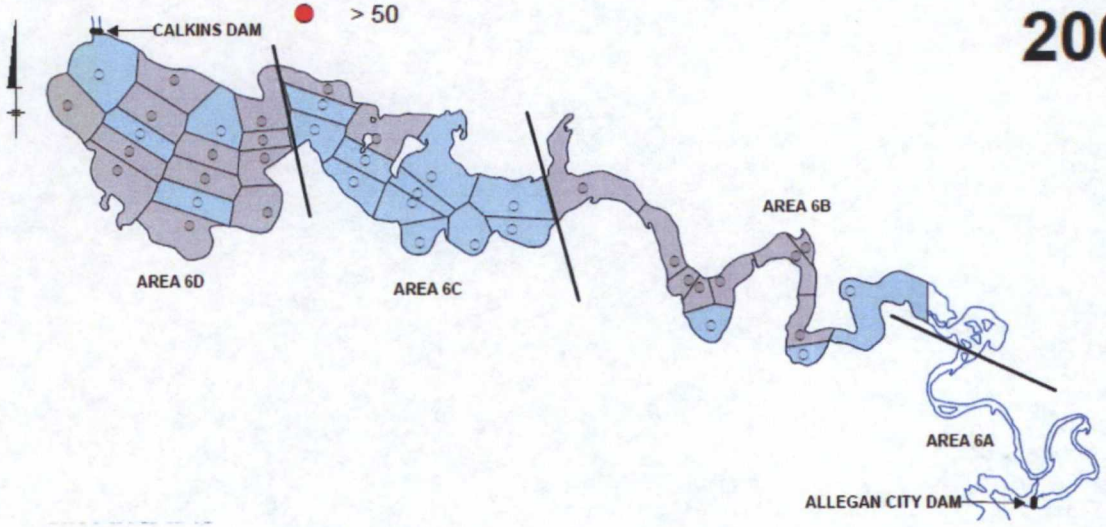
Lake Allegan Surface Sediment PCB

1993/94



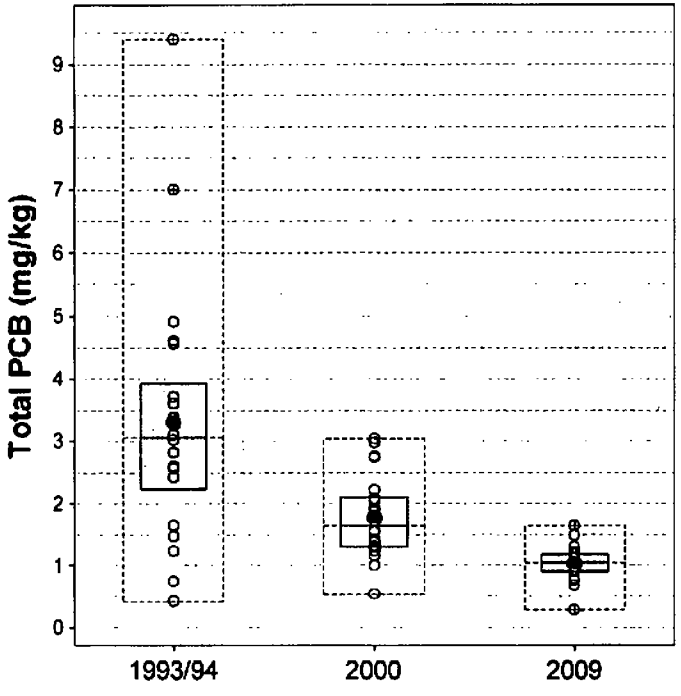
SWAC = 3.0 mg/kg

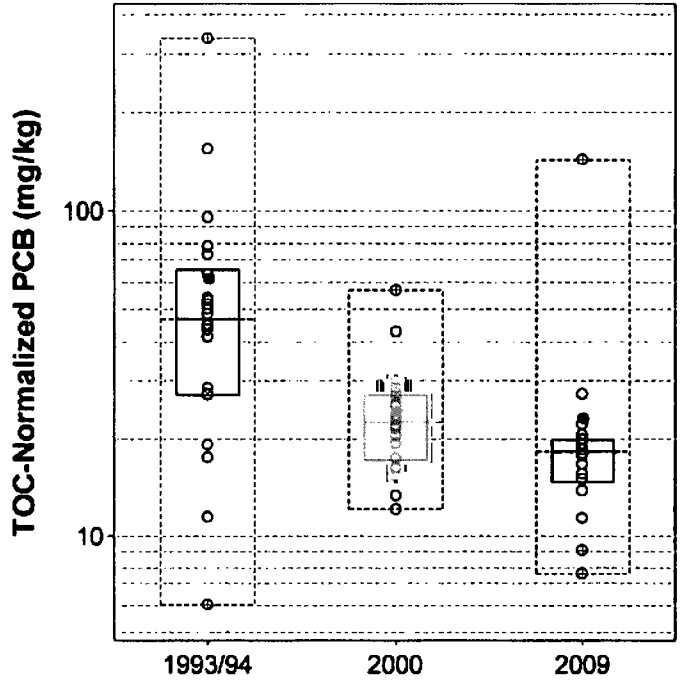
2009

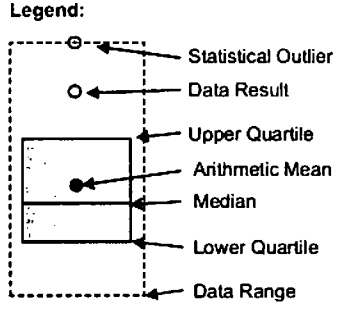


SWAC = 0.99 mg/kg

Lake Allegan Surface Sediment (0-2 inches) PCB Data: 1993/94, 2000, 2009

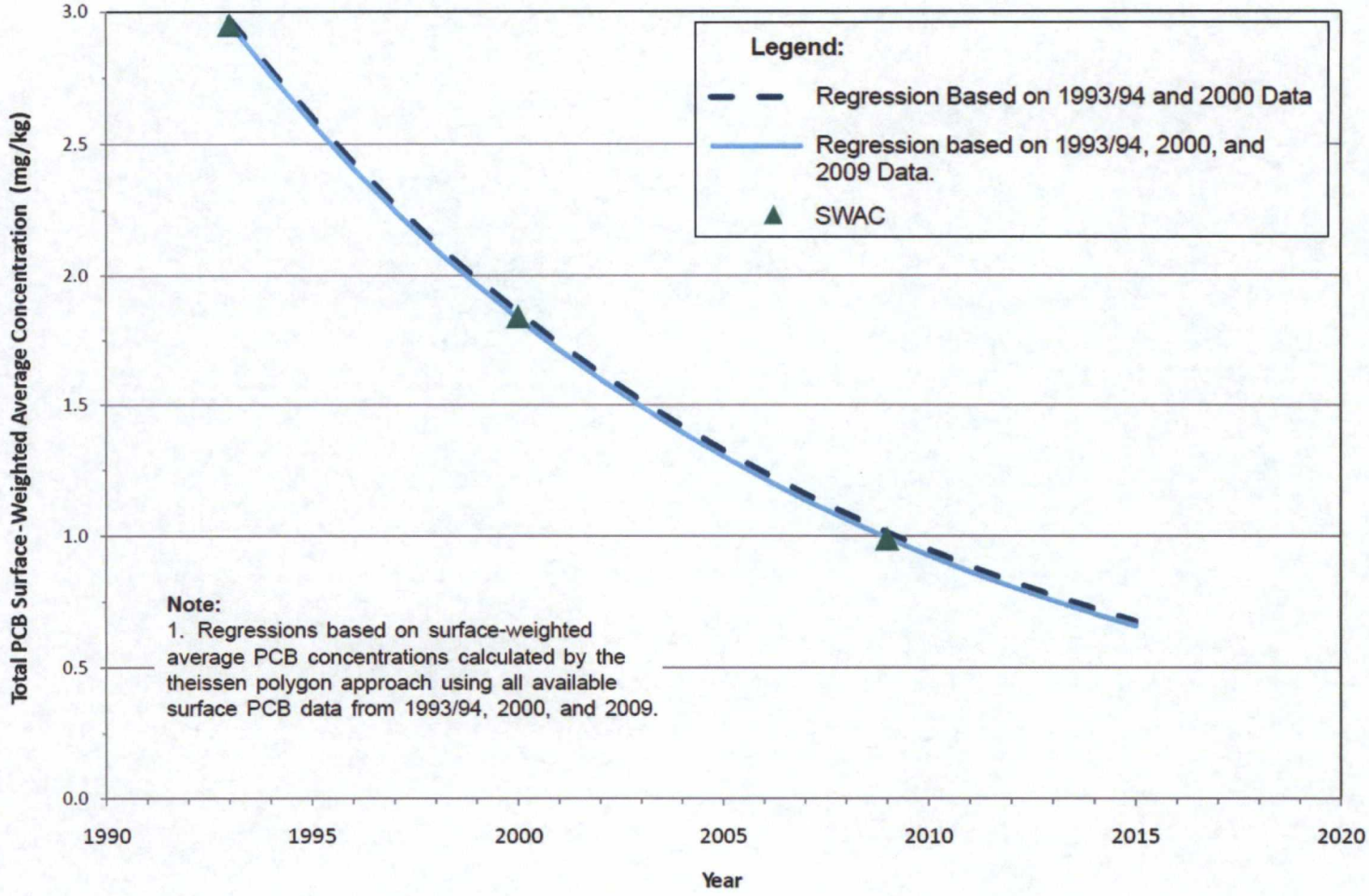






Notes:
1. One-half the detection limit was used as a proxy concentration for non-detects.
2. Parent/duplicate samples were averaged prior to analysis.
3. All available surface sediment samples shown for all years.

Lake Allegan Surface Sediment (0-2 inches) SWAC Attenuation Trend



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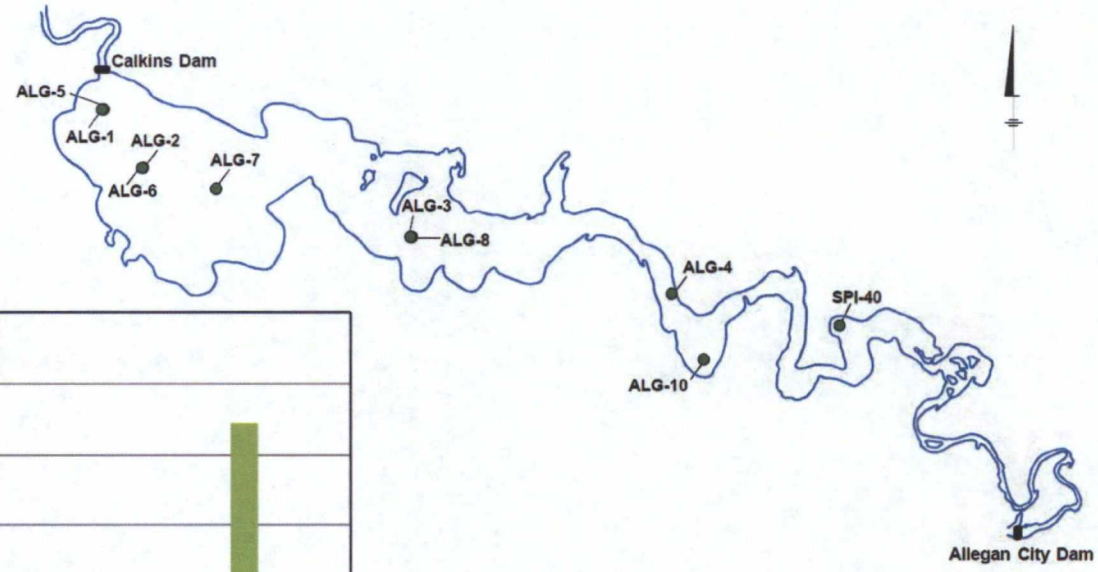
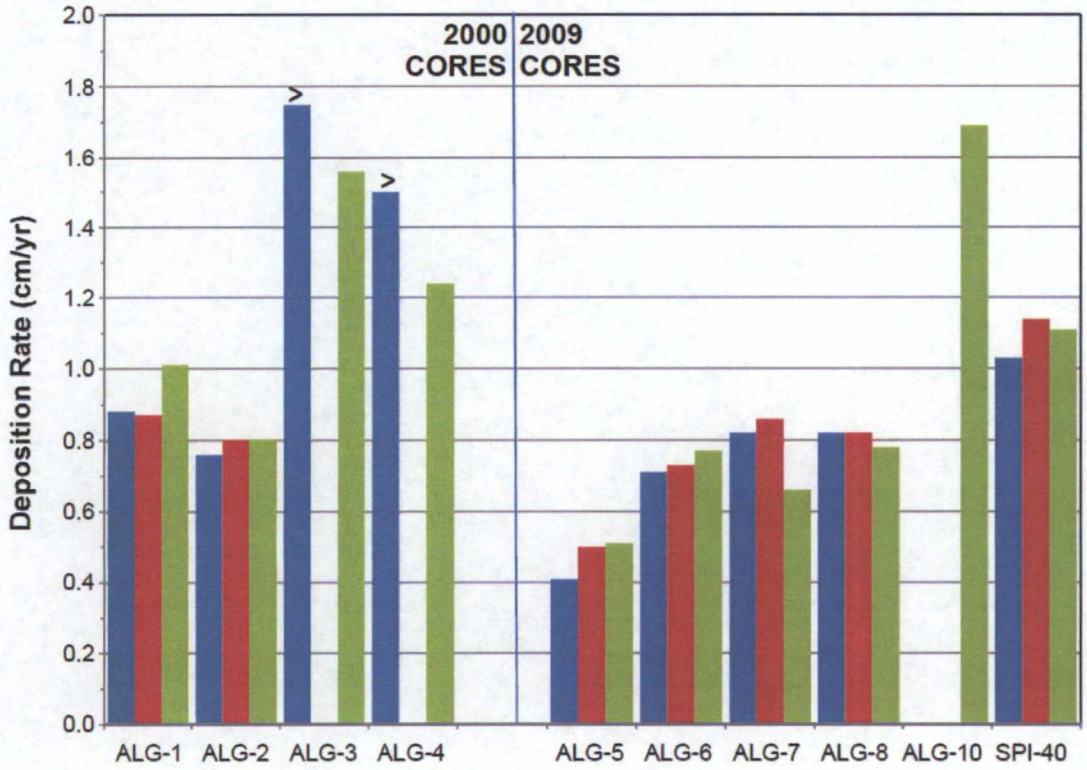
Lake Allegan Sediment Deposition Rates





Legend:

- Cs-137 Peak Method
- Cs-137 Horizon Method
- Pb-210 Slope Method

Notes:

1. Geochronology cores collected in March 2000 and May 2009.
2. Cs-137 horizon method not used for ALG-3, ALG-4, and ALG-10 due to lack of pre-1954 sediment in the core.
3. Cs-137 peak method not shown for ALG-10 due to lack of identifiable peak.
4. > indicates value may be greater as observed peak was at bottom of core.

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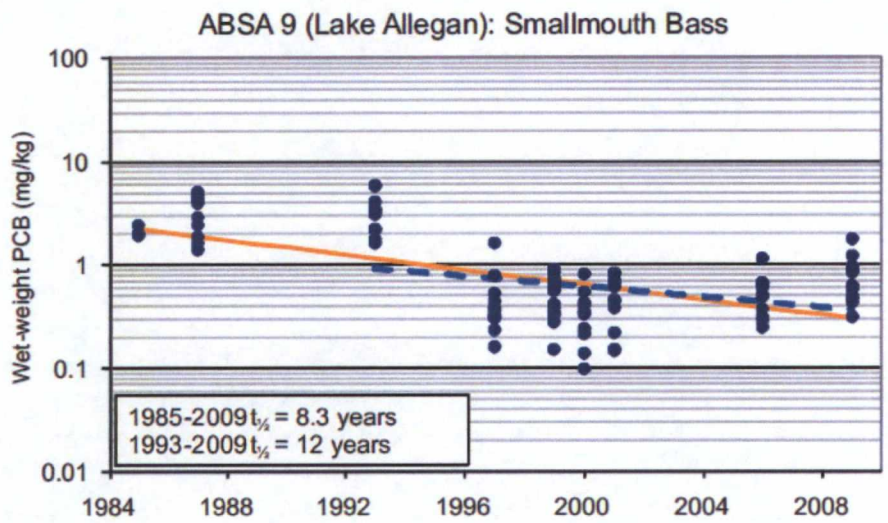
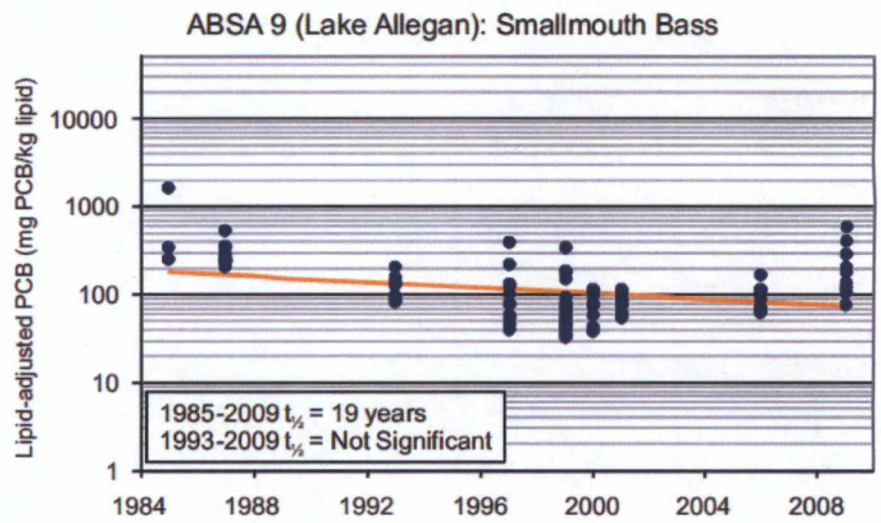
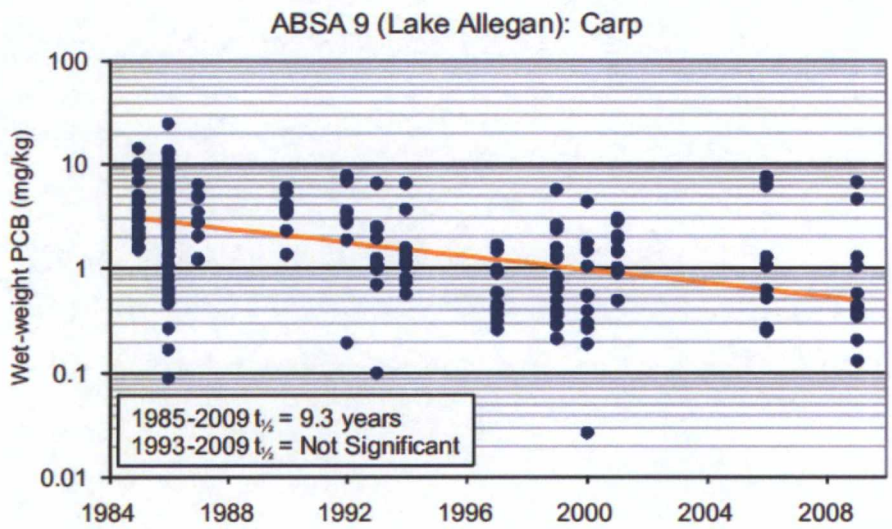
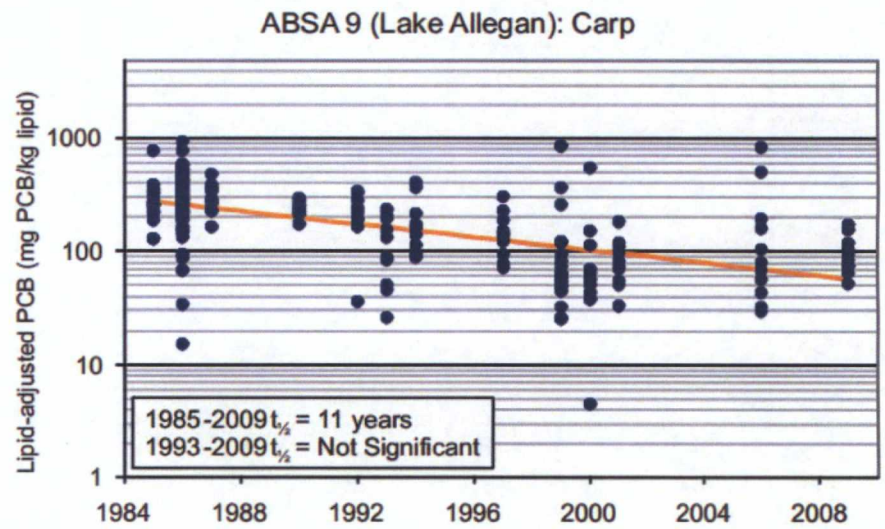
Lake Allegan Fish PCB Trend Analysis









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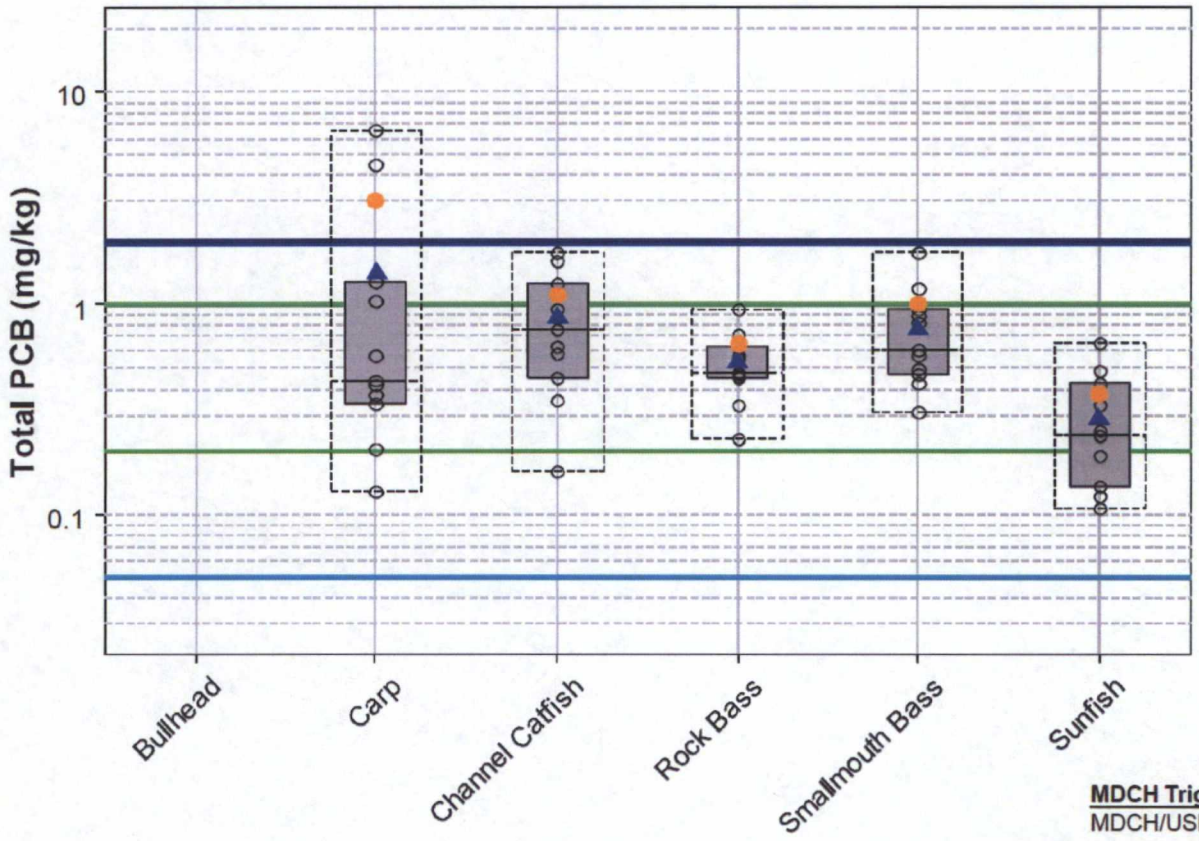
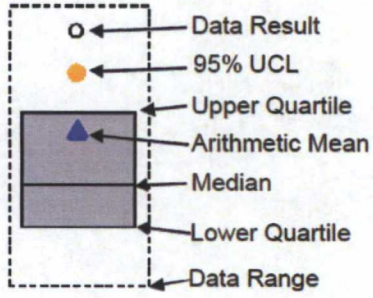
Lake Allegan 2009 Fish Fillet PCB vs. Consumption Advisory Levels





MDCH Trigger Levels

MDCH/USFDA General Population	2.0 mg/kg	
Women of Child Bearing Age and Children Under 15 Years		
No Consumption	1.9 mg/kg	
6 Meals per Year	1.0 mg/kg	
1 Meals per Month	0.2 mg/kg	
1 Meal per Week	0.05 mg/kg	

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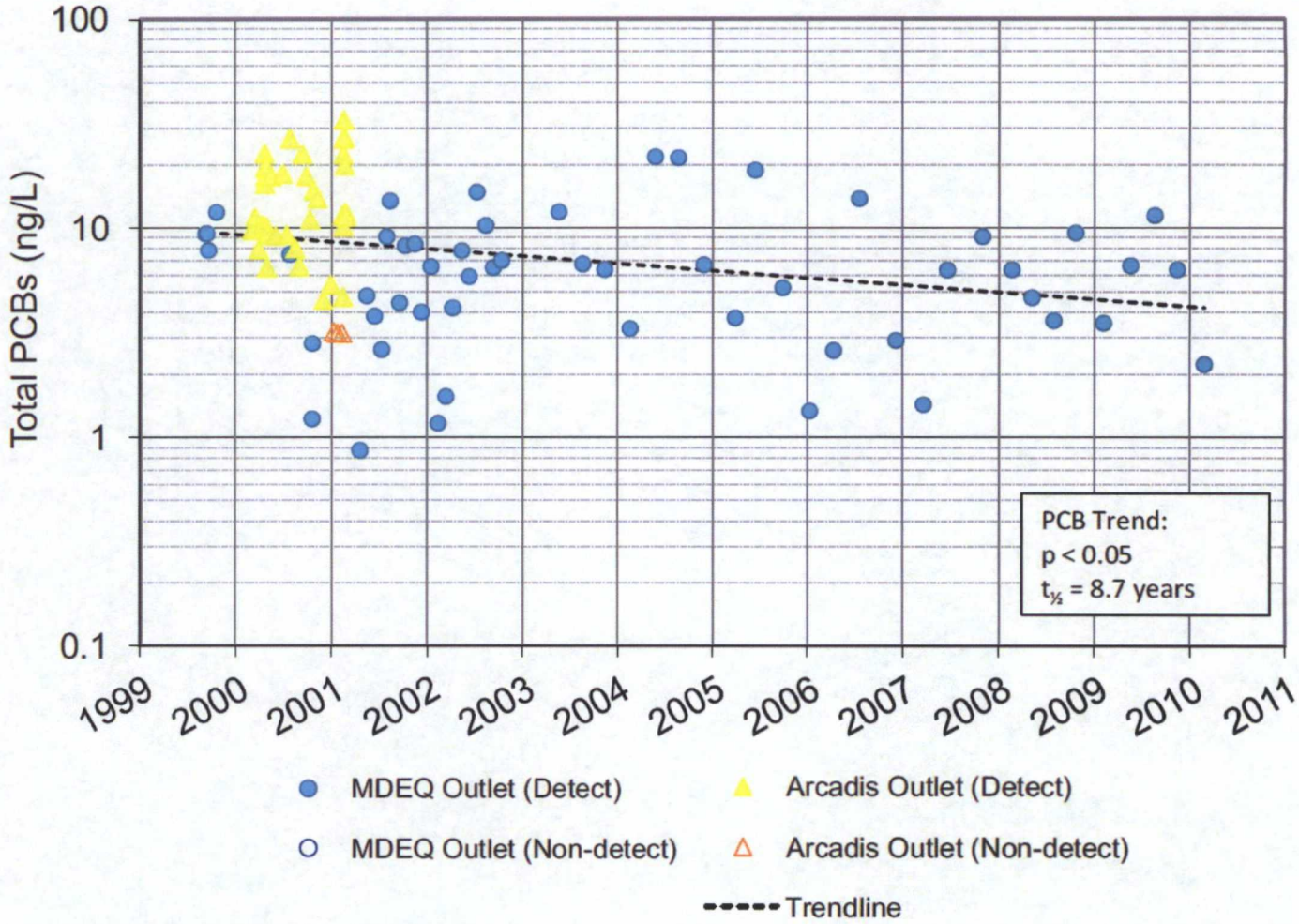
Lake Allegan Outlet Water Column PCB



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Lake Allegan Data Summary

- Multiple lines of evidence from the 2009 data confirm burial-driven recovery of surface sediment PCB since 1993/94, consistent with predicted trends from prior data
- Water column PCB trends over the decade 1999 to 2009 are similar to observed declines in surface sediment
- Historical rates of decline in carp and smallmouth bass PCB concentrations between 1985 and 2009 are noisy over time scales less than a decade
- Although recovery continues, ongoing transport from upstream is expected to sustain bioavailability of PCBs in the Lake at some level, until sources are reduced