

New Bedford Harbor PCB in Seafood Analysis

by

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MassDEP

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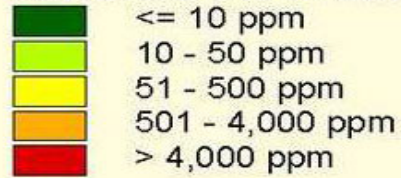
New Bedford Harbor



PCB Levels in Sediment (2001)


LEGEND


PCB Levels 0 to 12 inch depth





Sample Points (0-12" depth)

- PRE 9/98
- POST 9/98

 Mean High Water Line
(+ 2.4 ft NGVD)

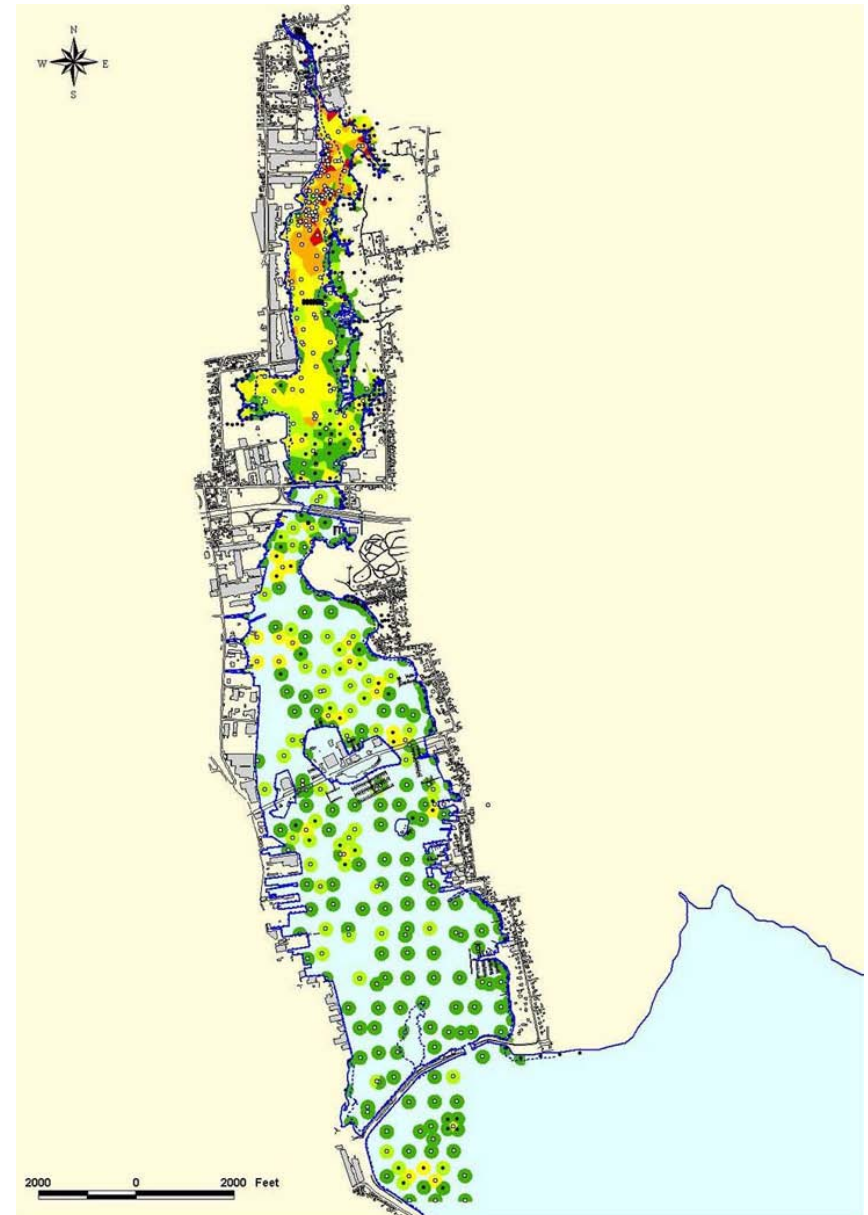
 Mean Lower Low Water Line
(-1.4 ft NGVD)

 Paved Road

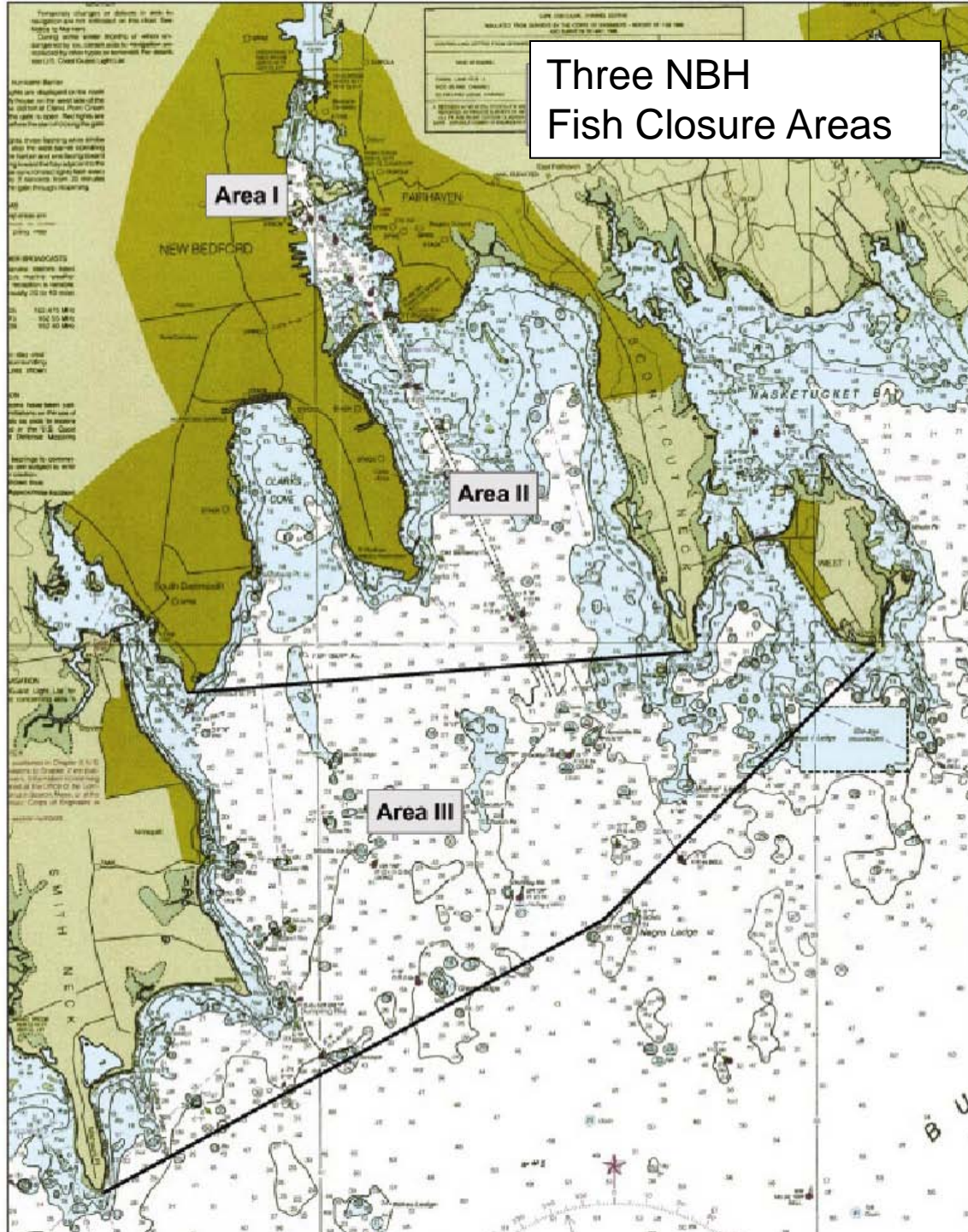
 Unpaved Road

Note:

PCB values were interpolated from the sample points shown on the drawing. PCB values at any location were assumed to be equal to the PCB value of the closest sample point.




Three NBH Fish Closure Areas



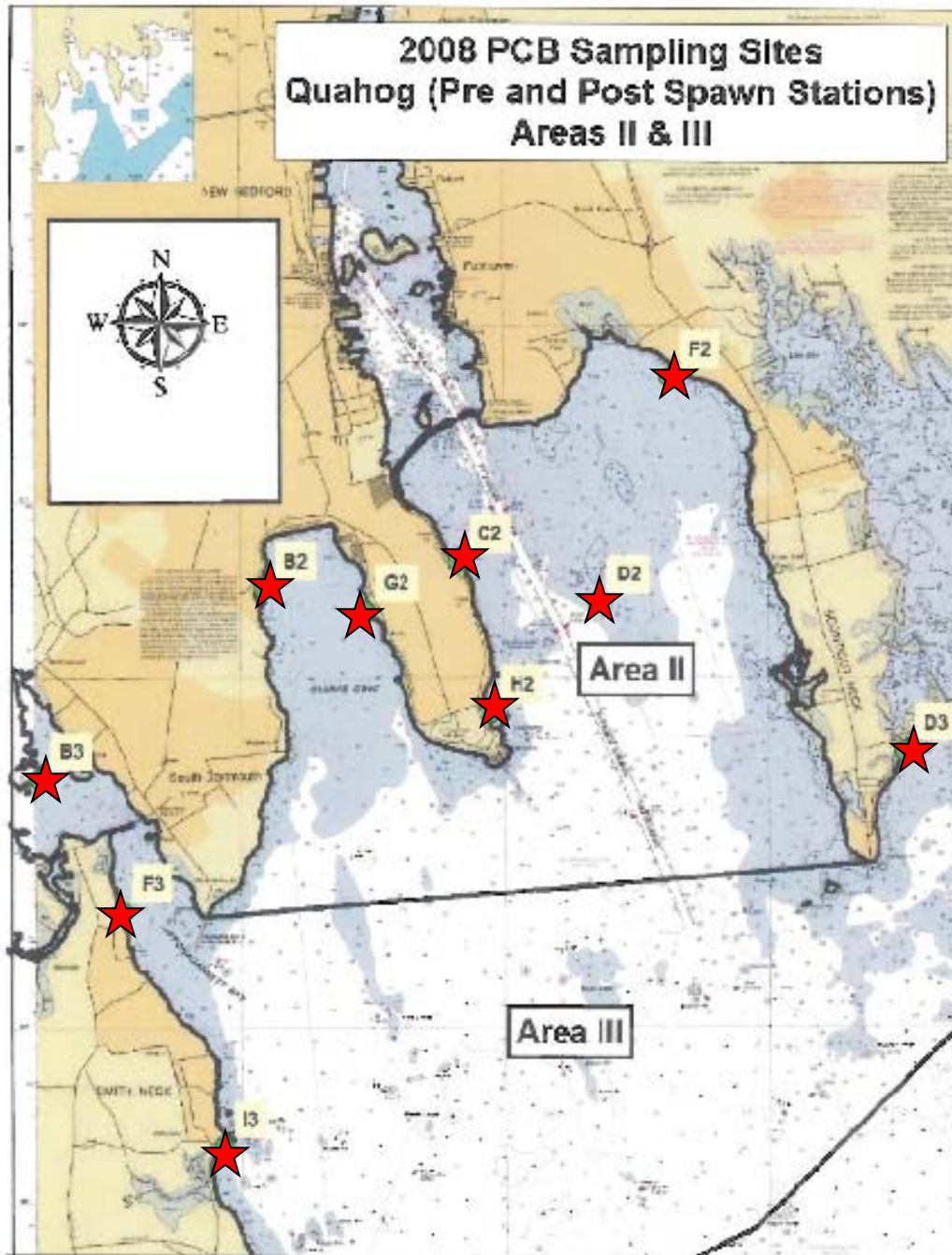
Sampling Design

- **Collect locally caught seafood annually**
- **Seafood obtained within Fish Closure Areas I, II, and III**
- **Attempt to sample 5 locations within each Closure Area, and 3 samples per specie per location**
- **Provide sufficient sample size to support future statistical comparison of PCB levels**

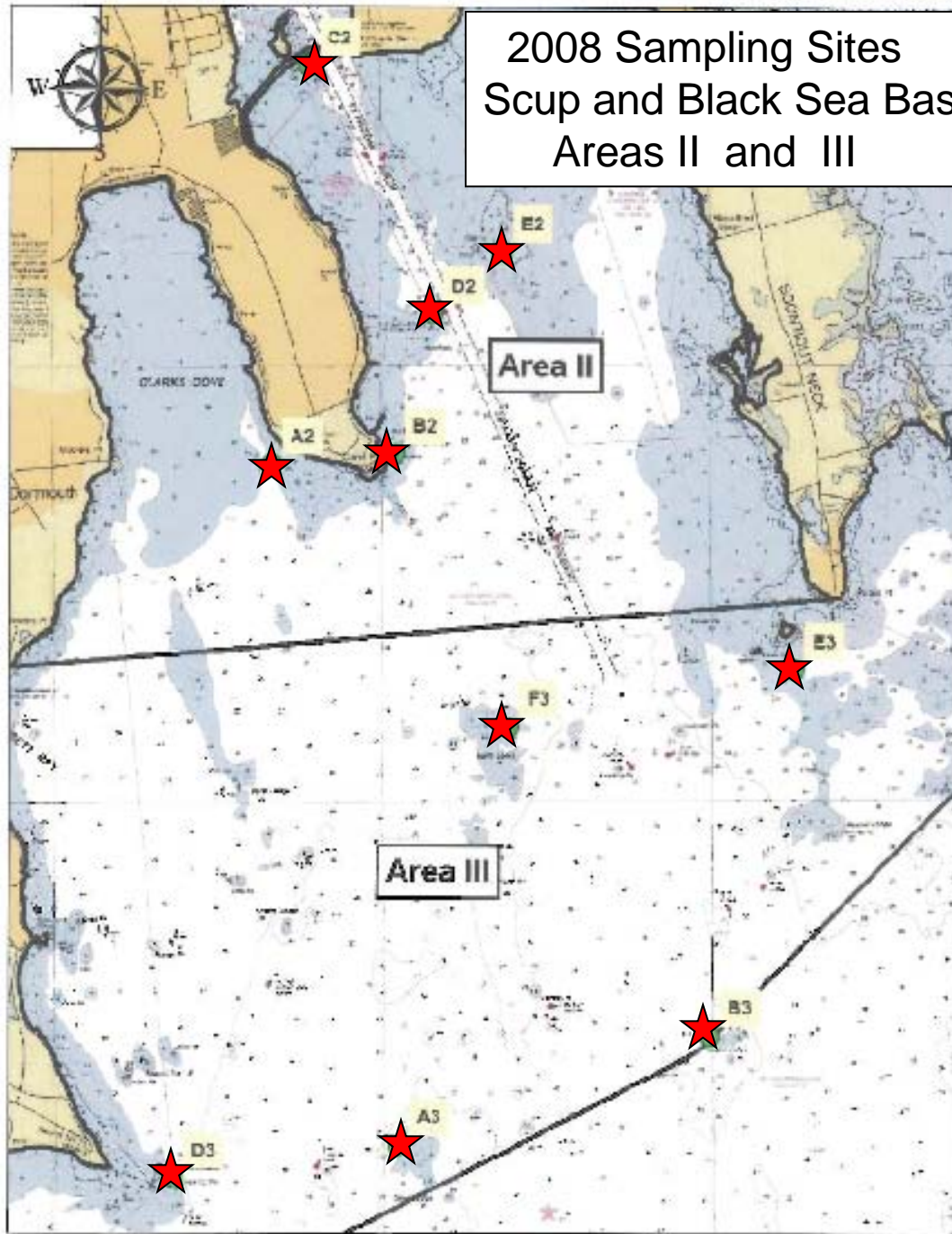
Species Selection

	Area Collected	Locations	Years	Symbol
Preferred Species				
Flounder	II I and III	2 2 to 4	2004 to 2006 2003 to 2003	
Quahog	I, II, and III	10 to 15	2002 to 2008	
Alewife	I	1 to 2	2005 to 2008	
Lobster	I II and III	1 10	2003 to 2007 2002 to 2007	
American Eel	I and II		2002, 2004 to 2007	
Alternate Species				
Black Sea Bass	II and III	9 to 10	2003 to 2008	
Blue Crab	I	4	2003 to 2007	
Bluefish	II and III	10	2007 to 2008	
Scup	II and III	10	2003 to 2008	

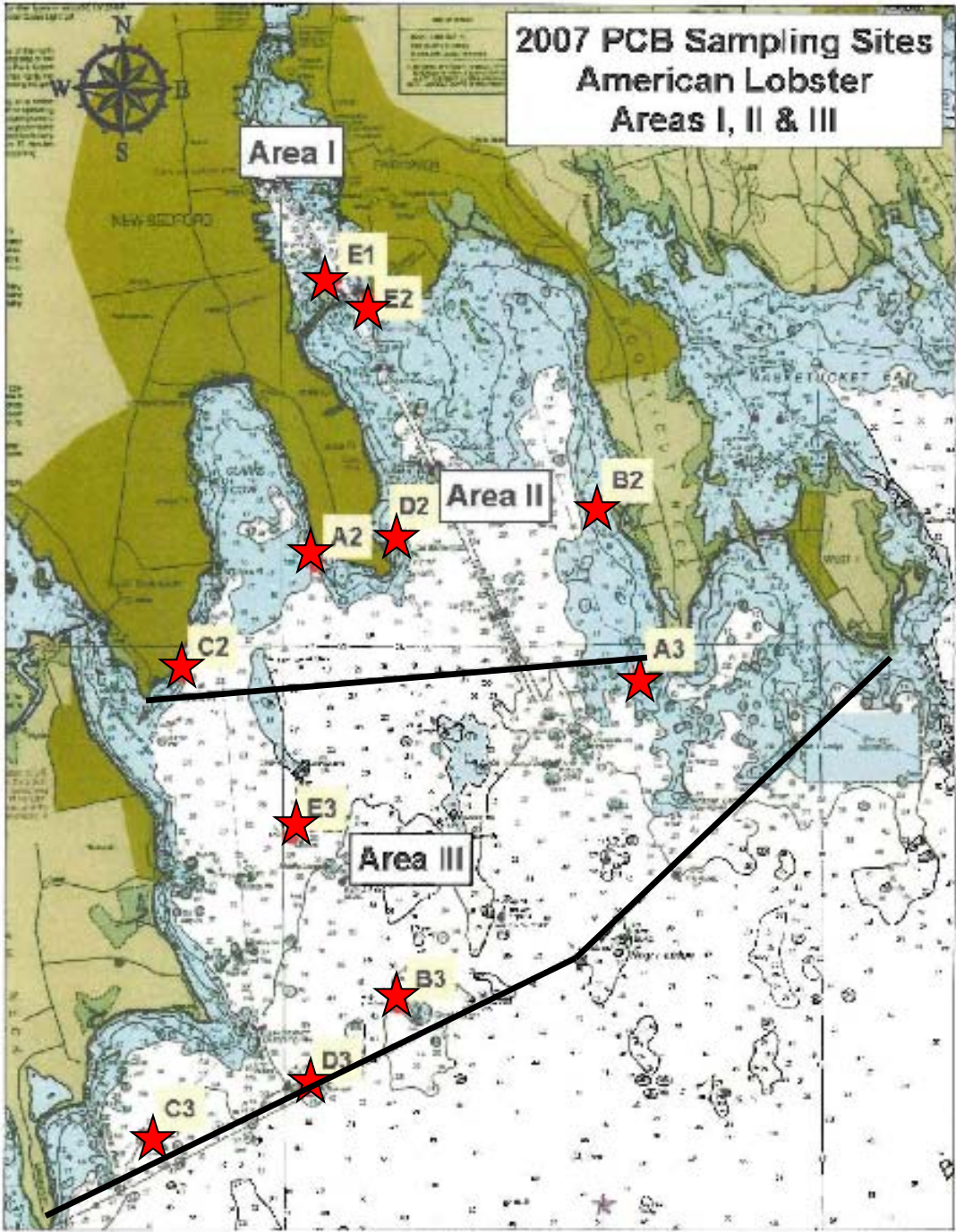
**2008 PCB Sampling Sites
Quahog (Pre and Post Spawn Stations)
Areas II & III**



2008 Sampling Sites
Scup and Black Sea Bass
Areas II and III



2007 PCB Sampling Sites American Lobster Areas I, II & III



Analytical Overview

Both approaches for PCB analysis are used:

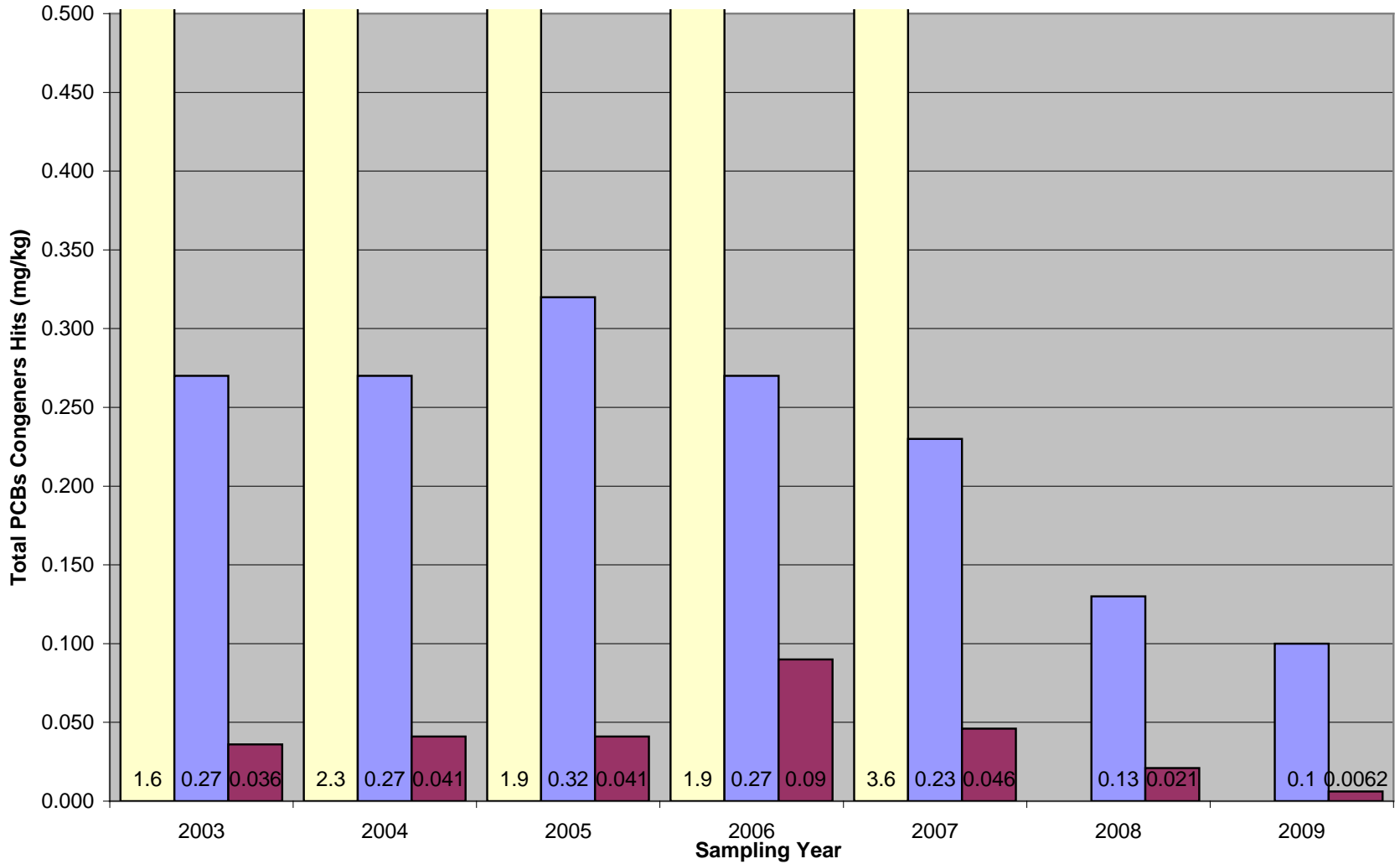
Aroclors[®] (the brand name PCB mixtures were sold as)

1232,1242,1248,1254,1260

Congeners (variations of the PCB molecule)

**136 different PCB congeners sampled for
(since 2003)**

Average PCBs in Quahog - ppm (pre-spawn)

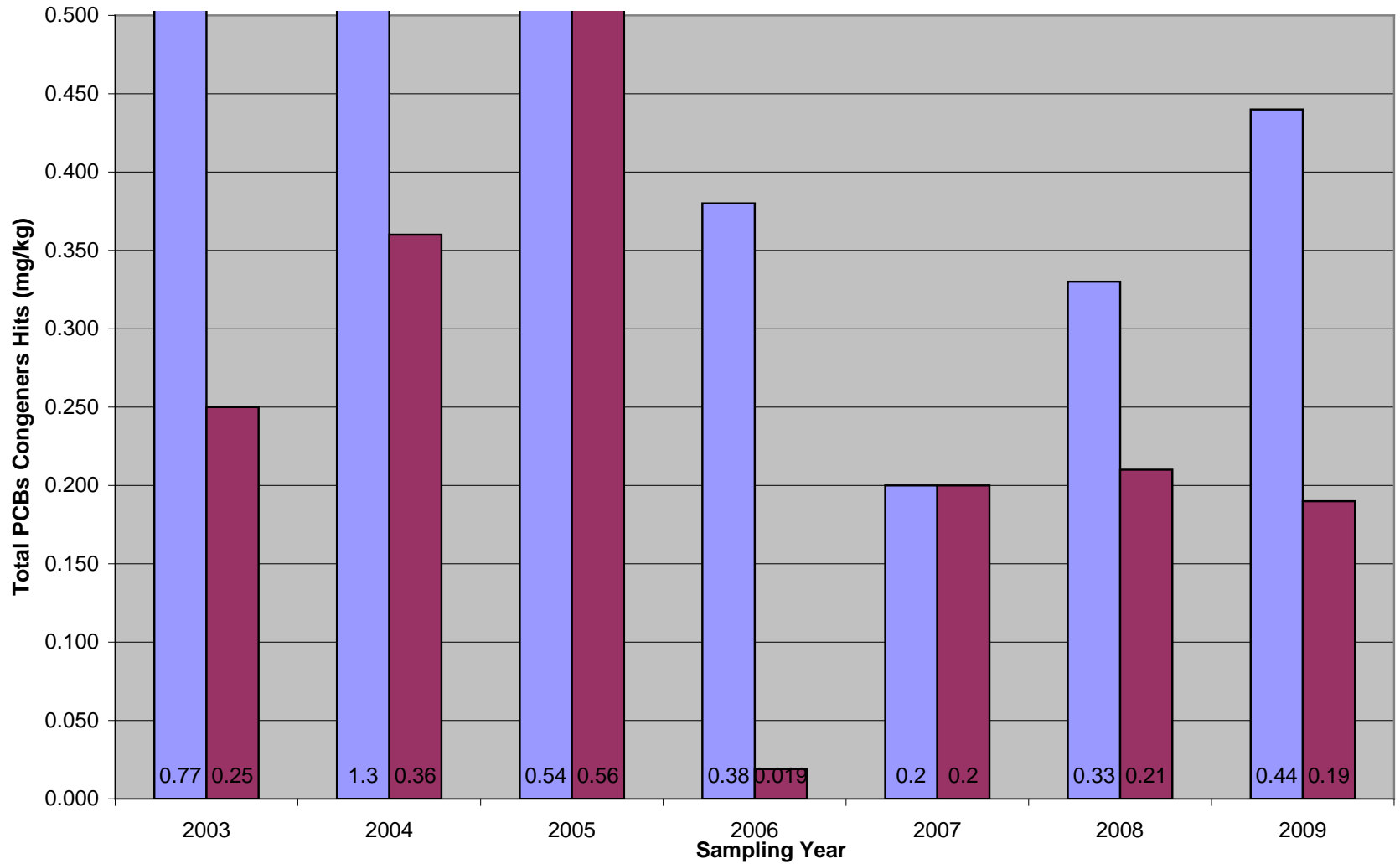


Area I

Area II

Area III

Average PCBs in Scup - ppm

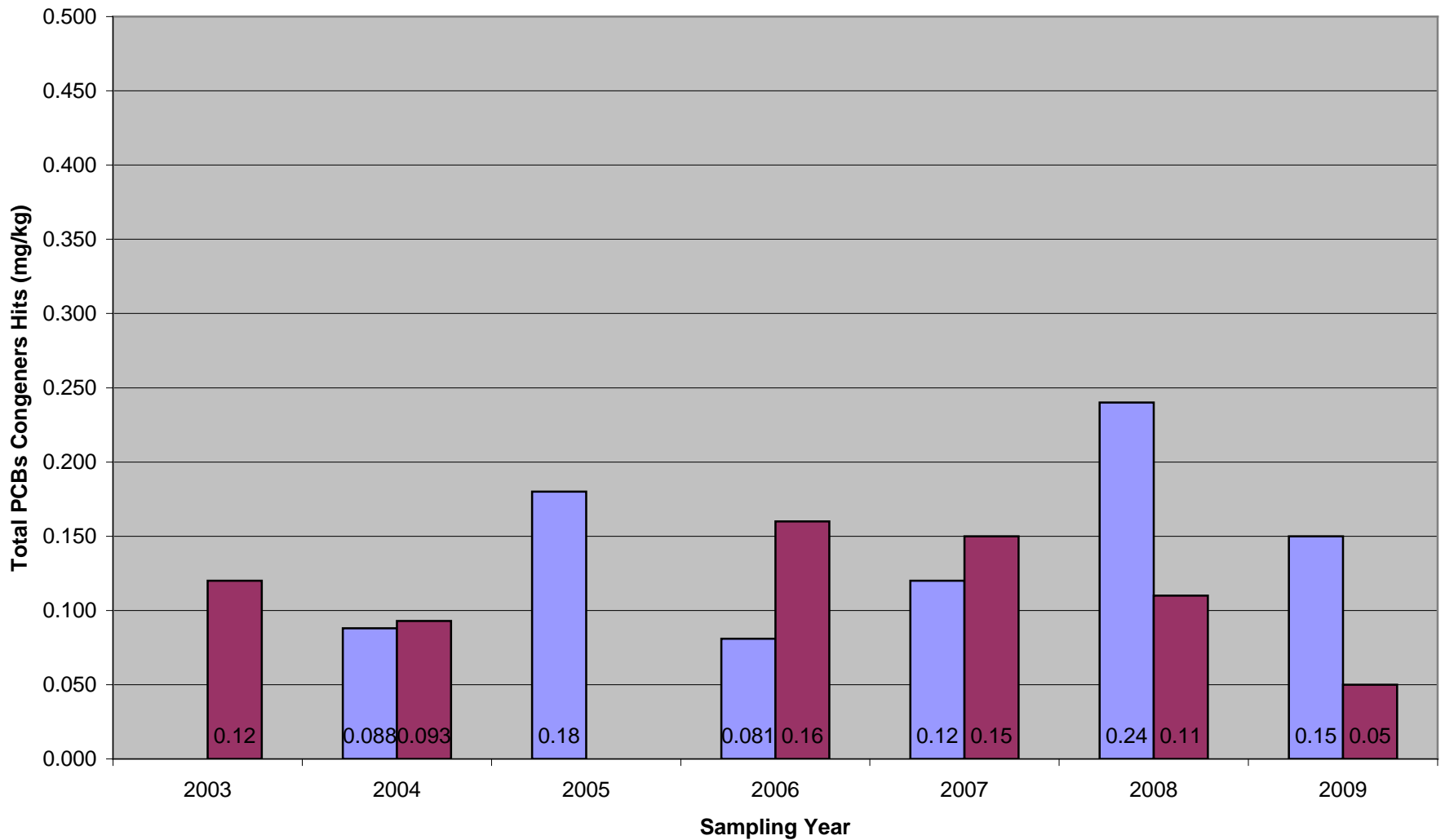


Area I

Area II

Area III

Average PCBs in Black Sea Bass - ppm

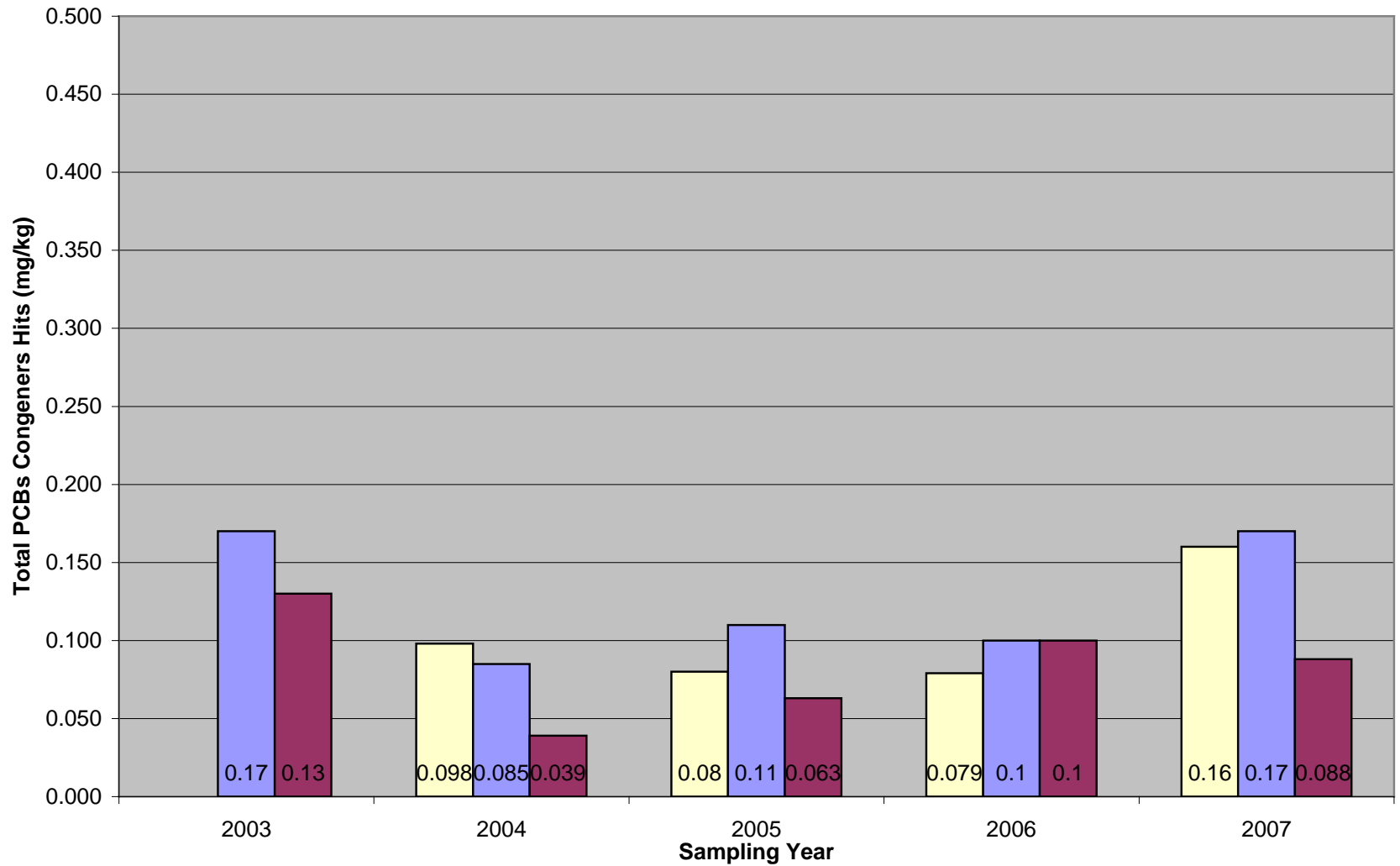


Area I

Area II

Area III

Average PCBs in Lobster Meat - ppm

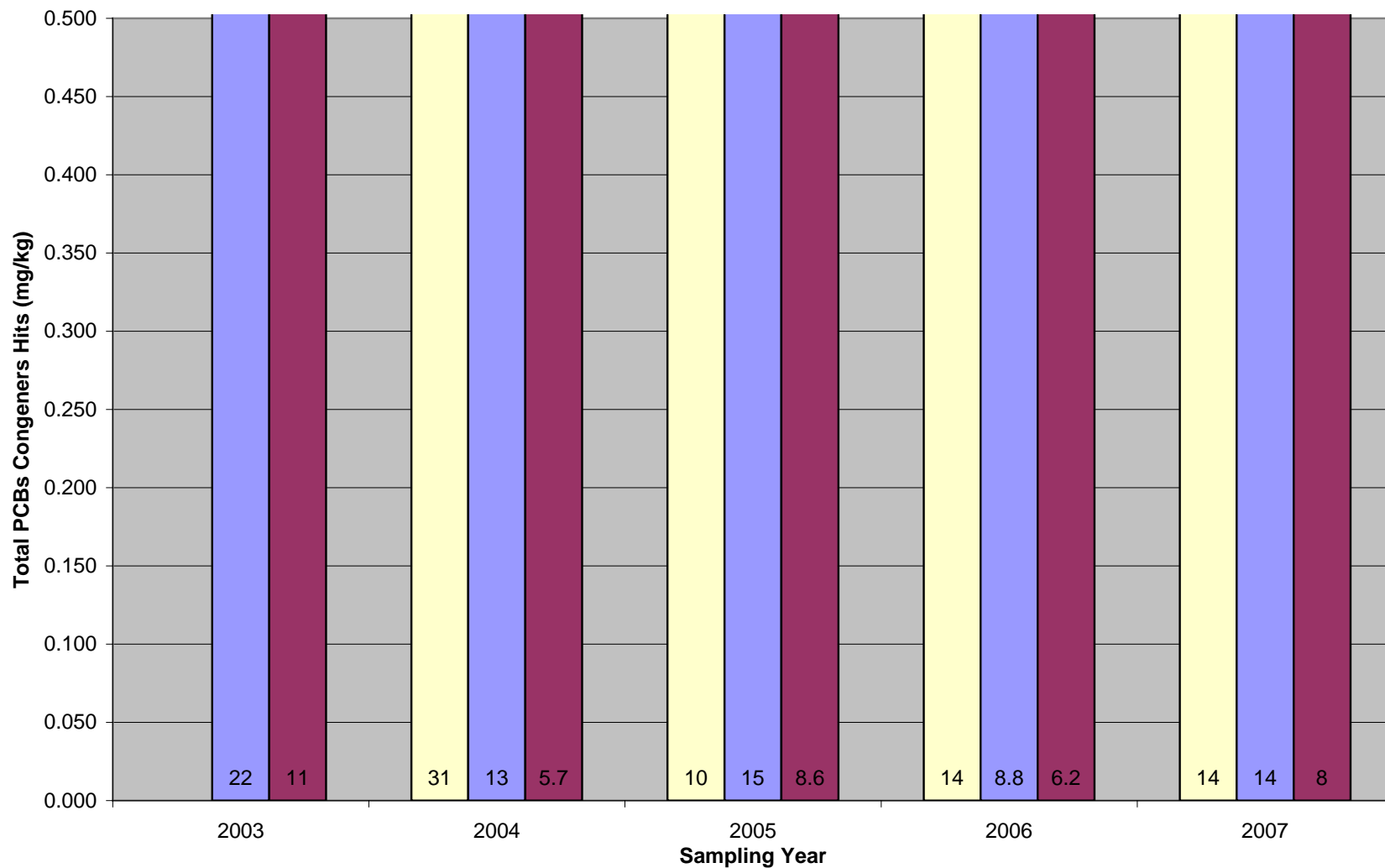


Area I

Area II

Area III

Average PCBs in Lobster Tomalley - ppm

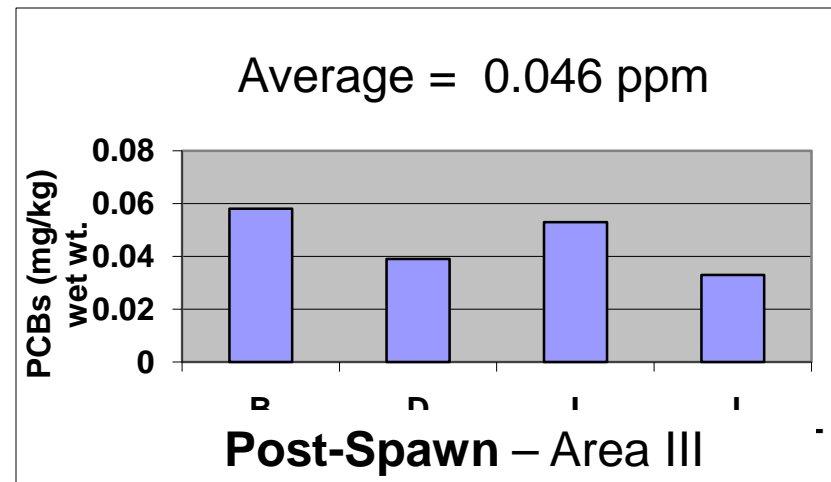
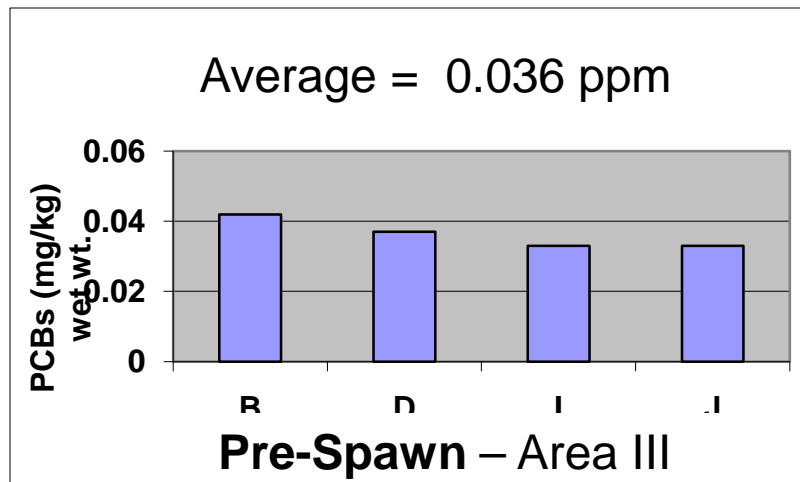
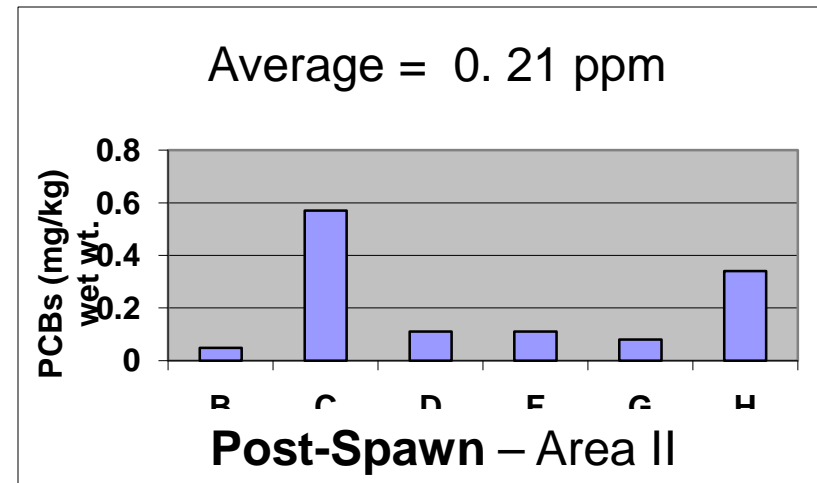
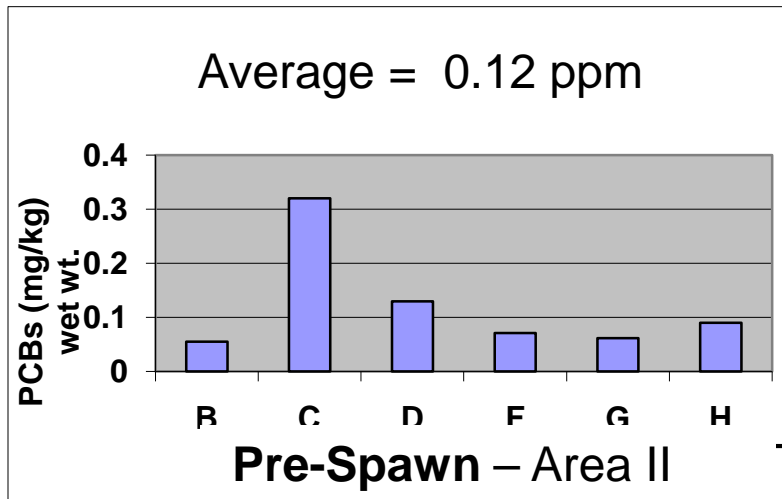


Area I

Area II

Area III

PCBs in QUAHOG also tested before and after spawning - 2009 data shown below



CONCLUSIONS

Does not appear that dredging has affected PCB concentrations in Site seafood.

PCB concentration in most seafood tracked PCB concentrations in sediment.

Seafood advisories still needed.



New Bedford Harbor Seafood monitoring
reports can be found at:

<http://www.epa.gov/ne/nbh/techdocs.html>

2002 thru 2008 available