New Bedford Harbor PCB in Seafood Analysis

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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

- <= 10 ppm
- 10 - 50 ppm
- 51 - 500 ppm
- 501 - 4,000 ppm
- > 4,000 ppm

Sample Points (0-12" depth)

- PRE 9/98
- POST 9/98

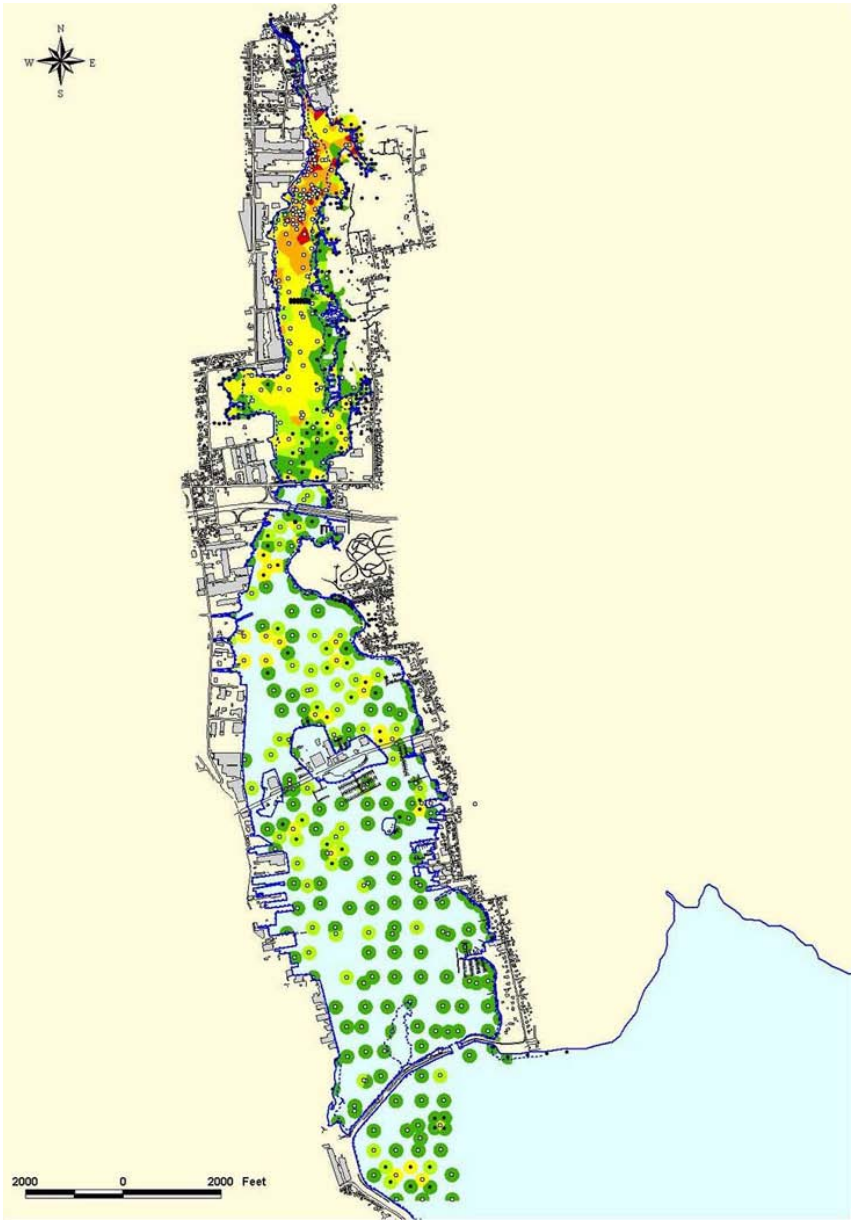
Mean High Water Line
(+ 2.4 ft NGVD)

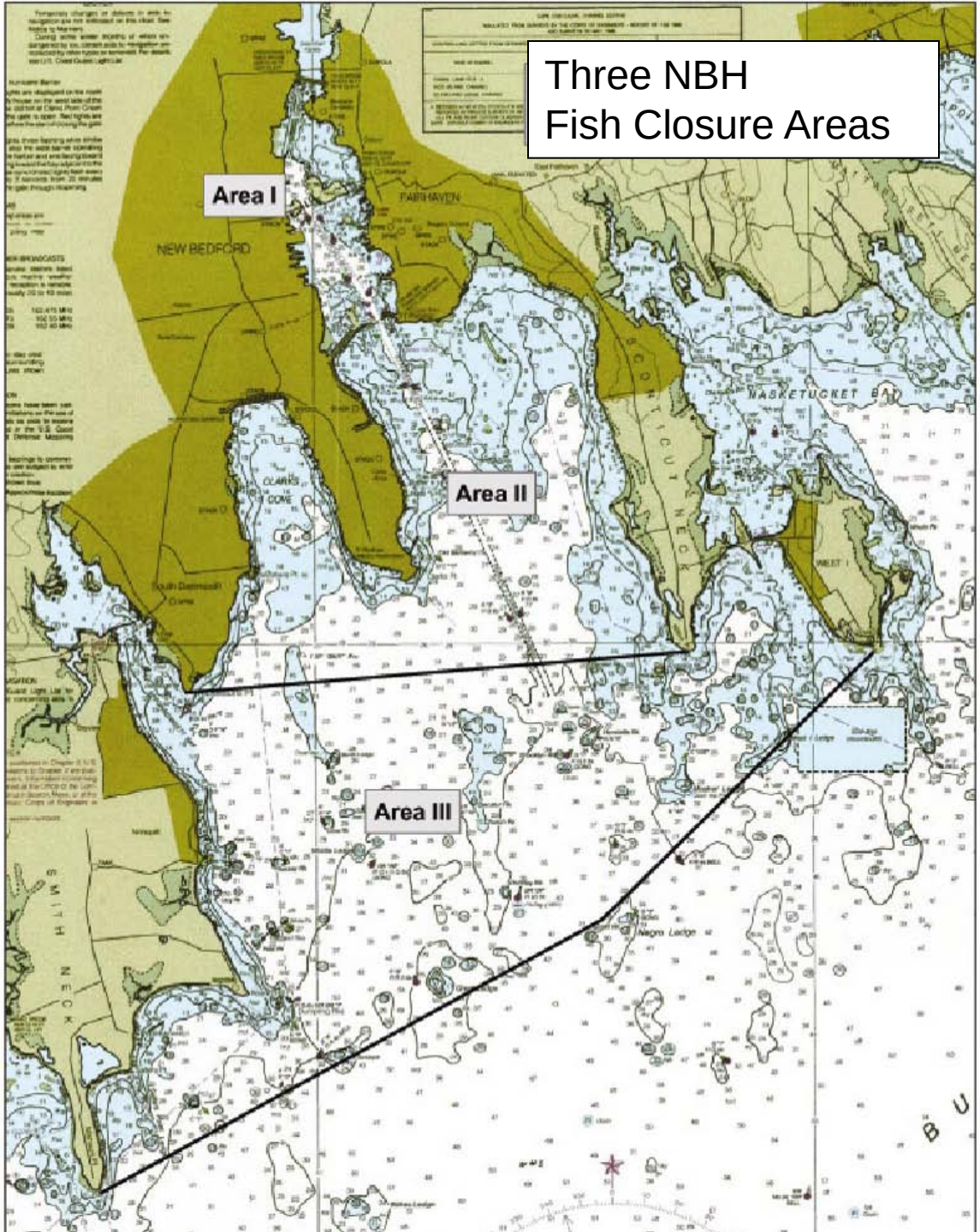
Mean Lower Low Water Line
(-1.4 ft NGVD)

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.



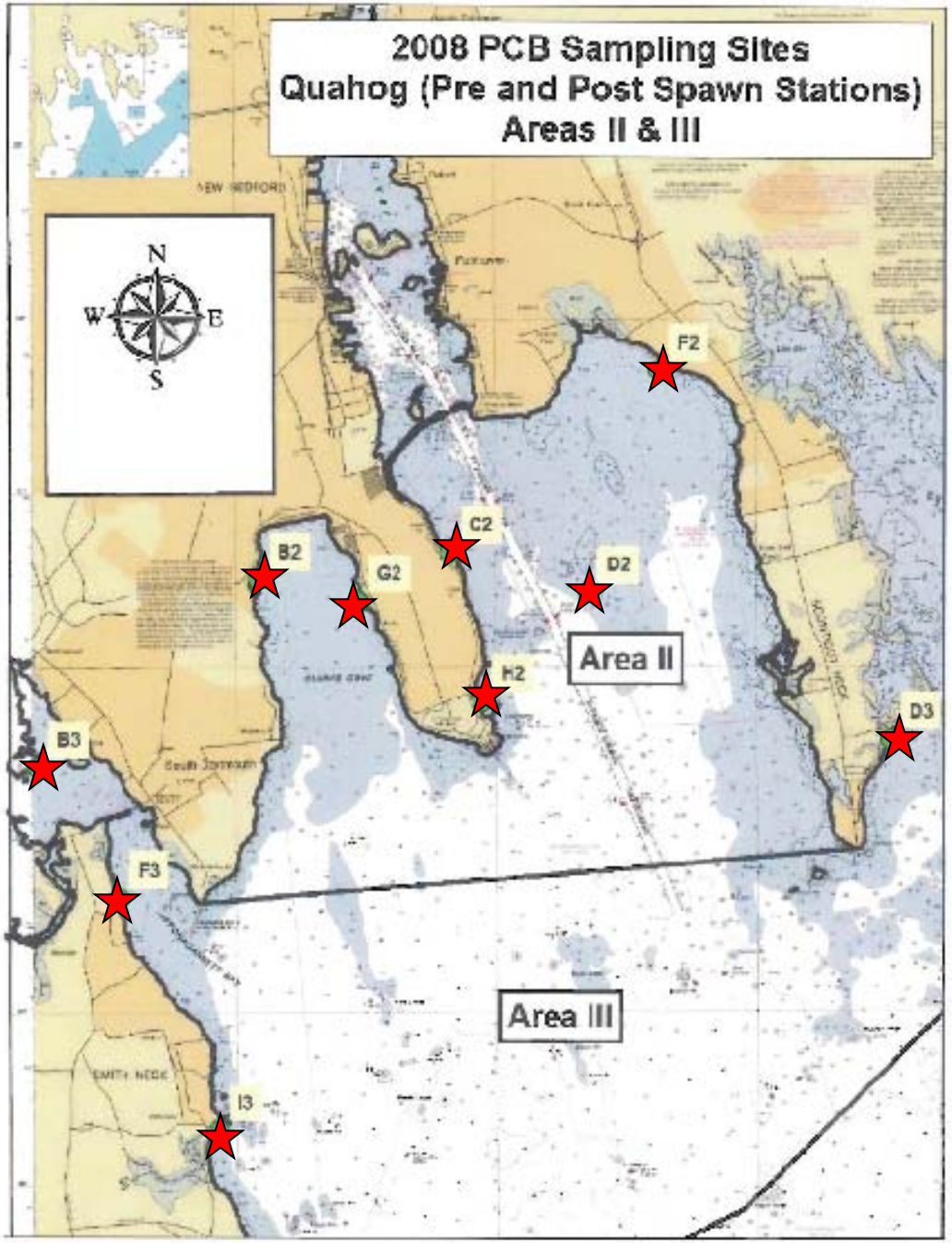

Three NBH
Fish Closure Areas
Area I
Area II
Area III
NEW BEDFORD
FAIRHAVEN
NASKETUCKET BAY
CLARKS COVE
South Dartmouth
Negro Ledge

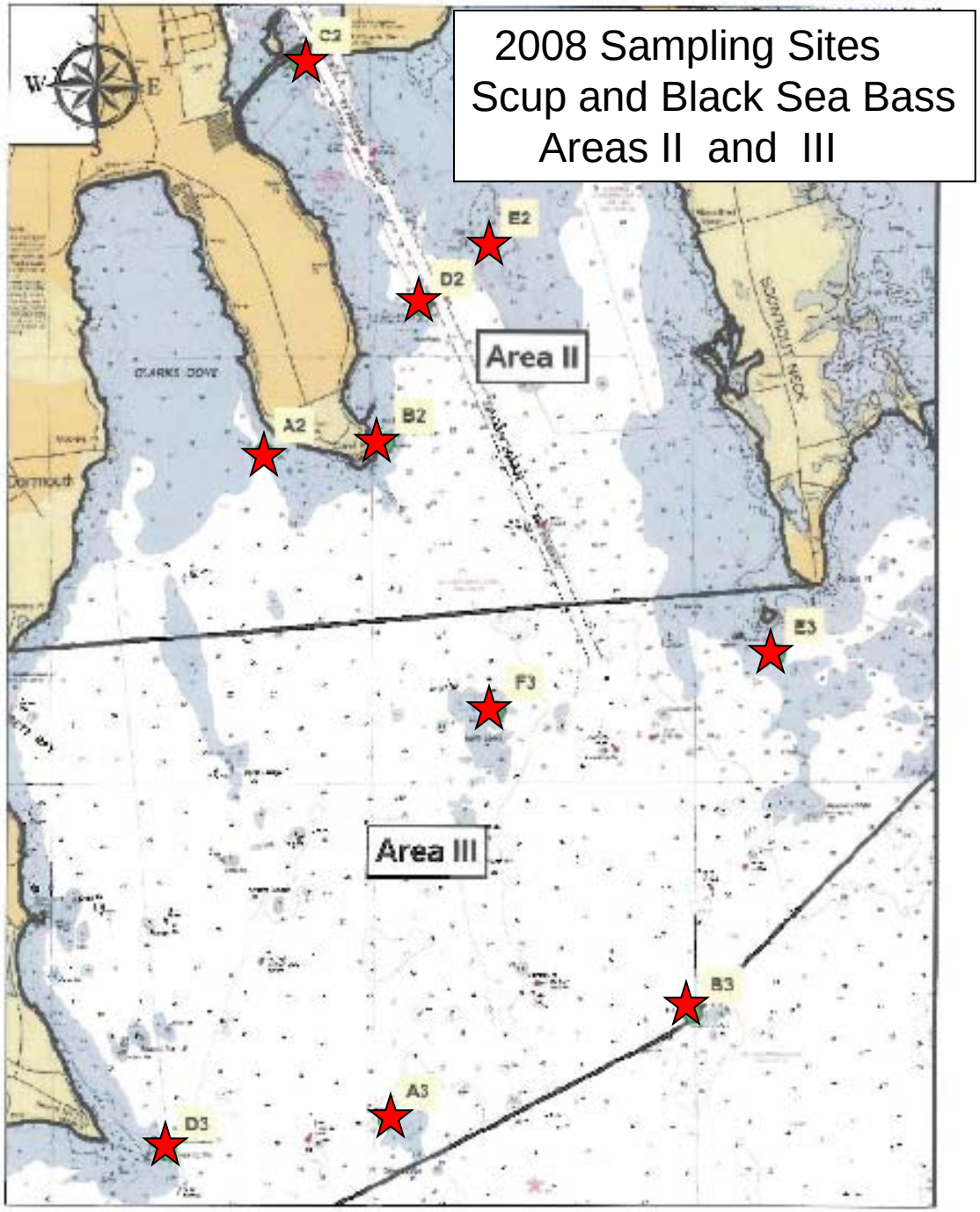
Sampling Design

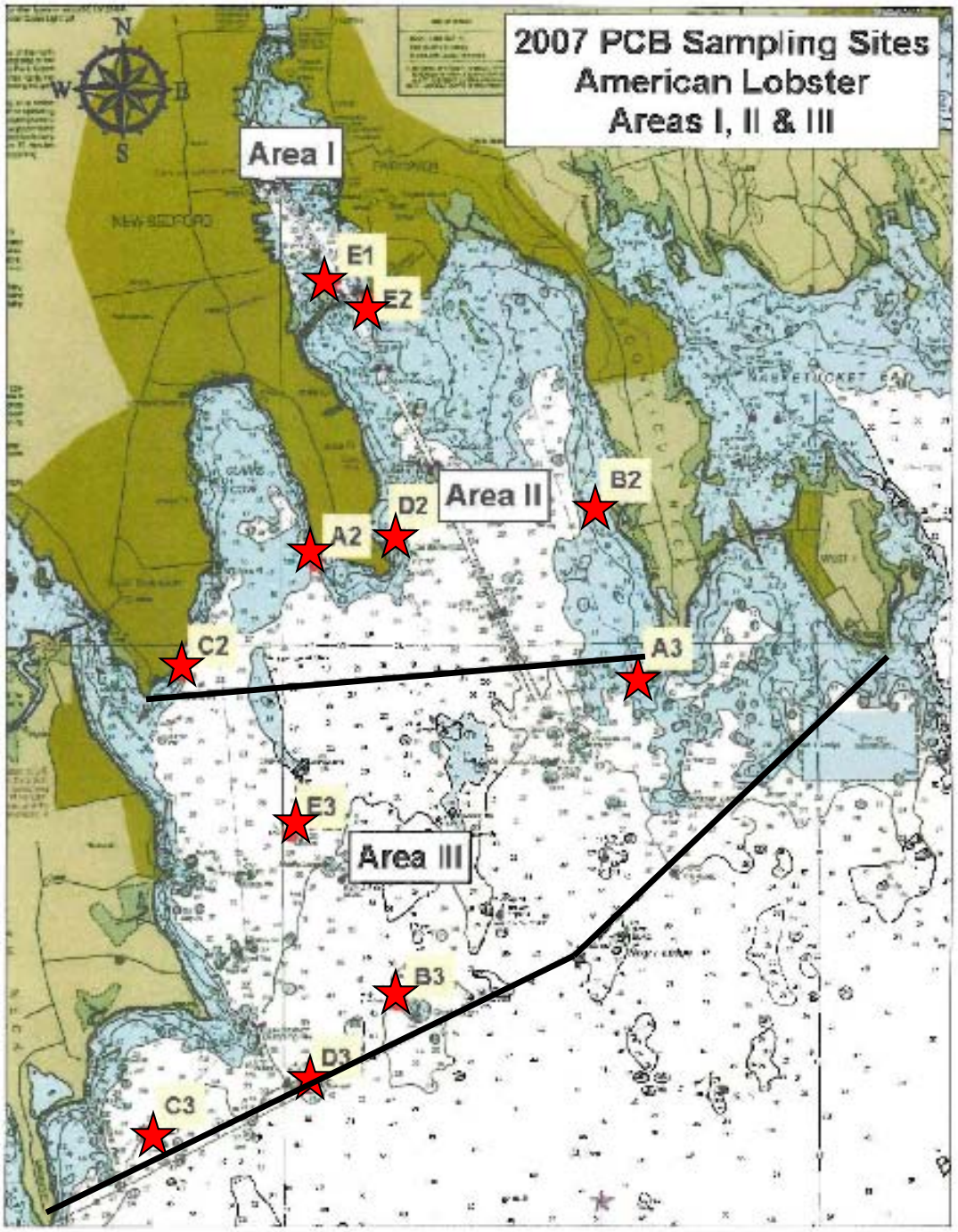
- **Collect locally caught seafood annually**
- **Seafood obtained within Fish Closure Areas I, II, and III**
- **Attempt to sample 5 locations within each Closure Area, and 3 samples per specie per location**
- **Provide sufficient sample size to support future statistical comparison of PCB levels**

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
NEW BEDFORD
N
W
E
S
F2
C2
B2
G2
D2
Area II
H2
D3
B3
F3
Area III
I3


2008 Sampling Sites
Scup and Black Sea Bass
Areas II and III
C2
E2
D2
Area II
A2
B2
E3
F3
Area III
B3
A3
D3


2007 PCB Sampling Sites
American Lobster
Areas I, II & III
N
W
E
S
Area I
Area II
Area III
E1
E2
D2
A2
B2
C2
A3
E3
B3
D3
C3

Analytical Overview

Both approaches for PCB analysis are used:

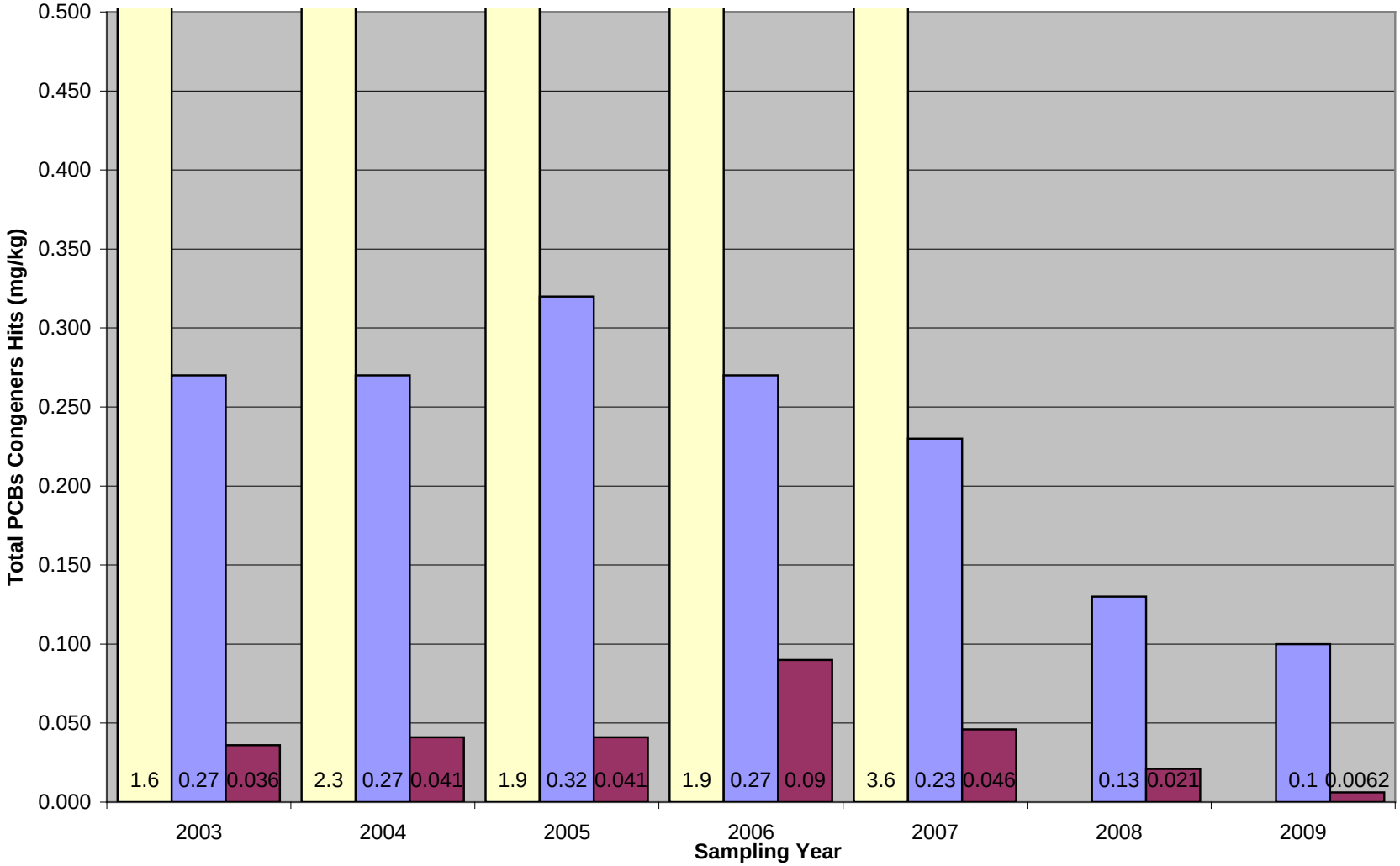
Aroclors© (the brand name PCB mixtures were sold as)

1232,1242,1248,1254,1260

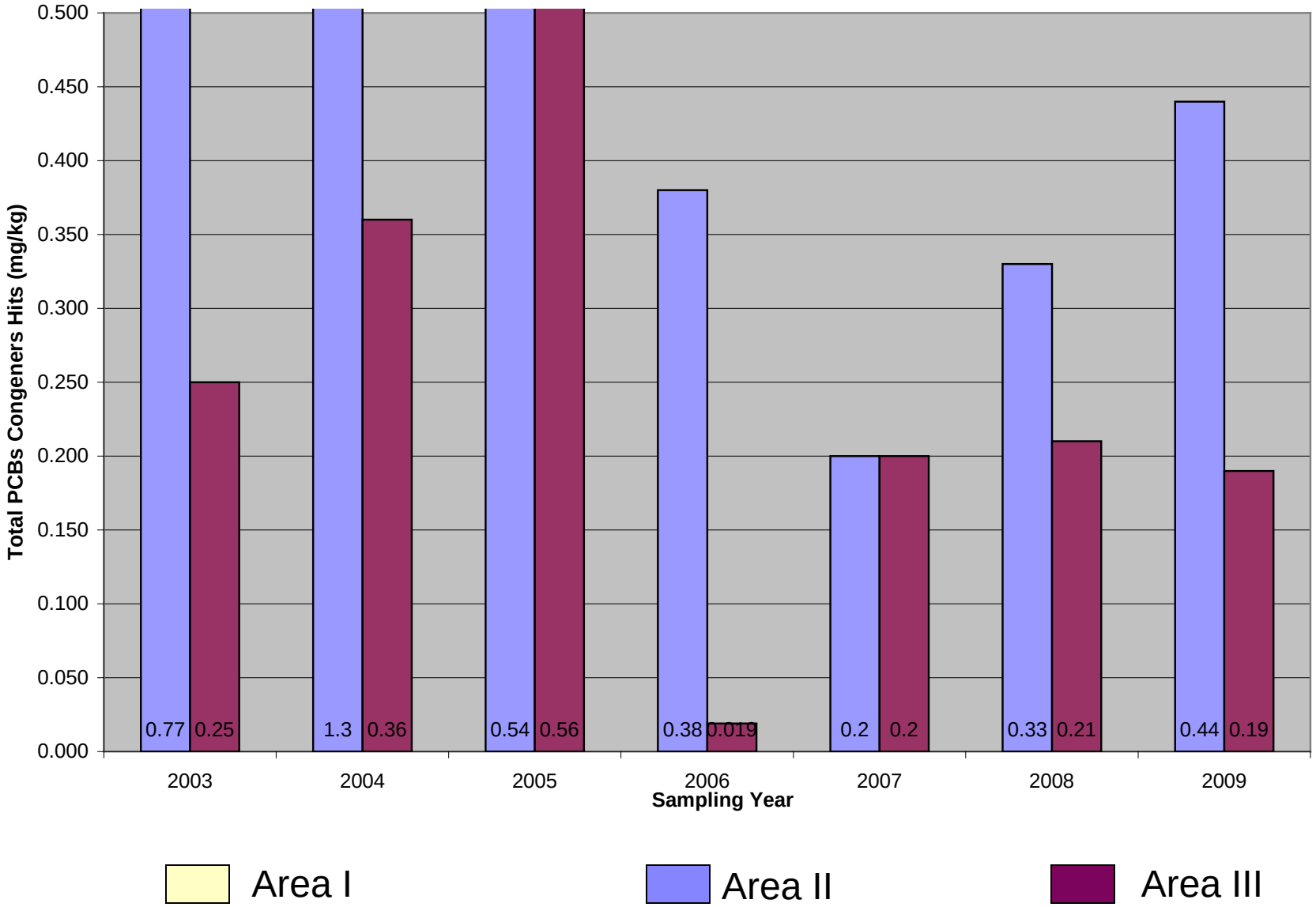
Congeners (variations of the PCB molecule)

136 different PCB congeners sampled for (since 2003)

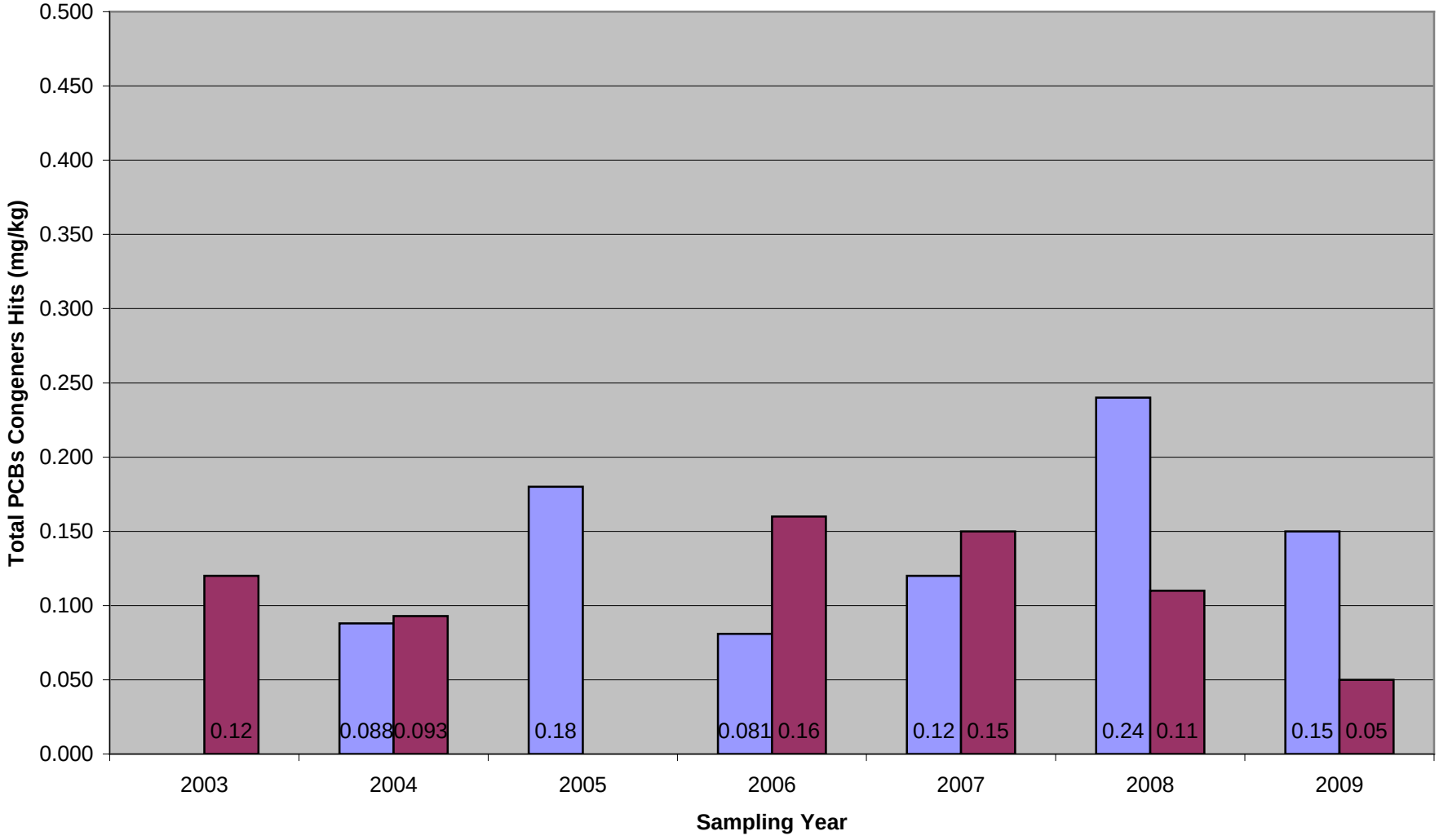
Average PCBs in Quahog - ppm (pre-spawn)



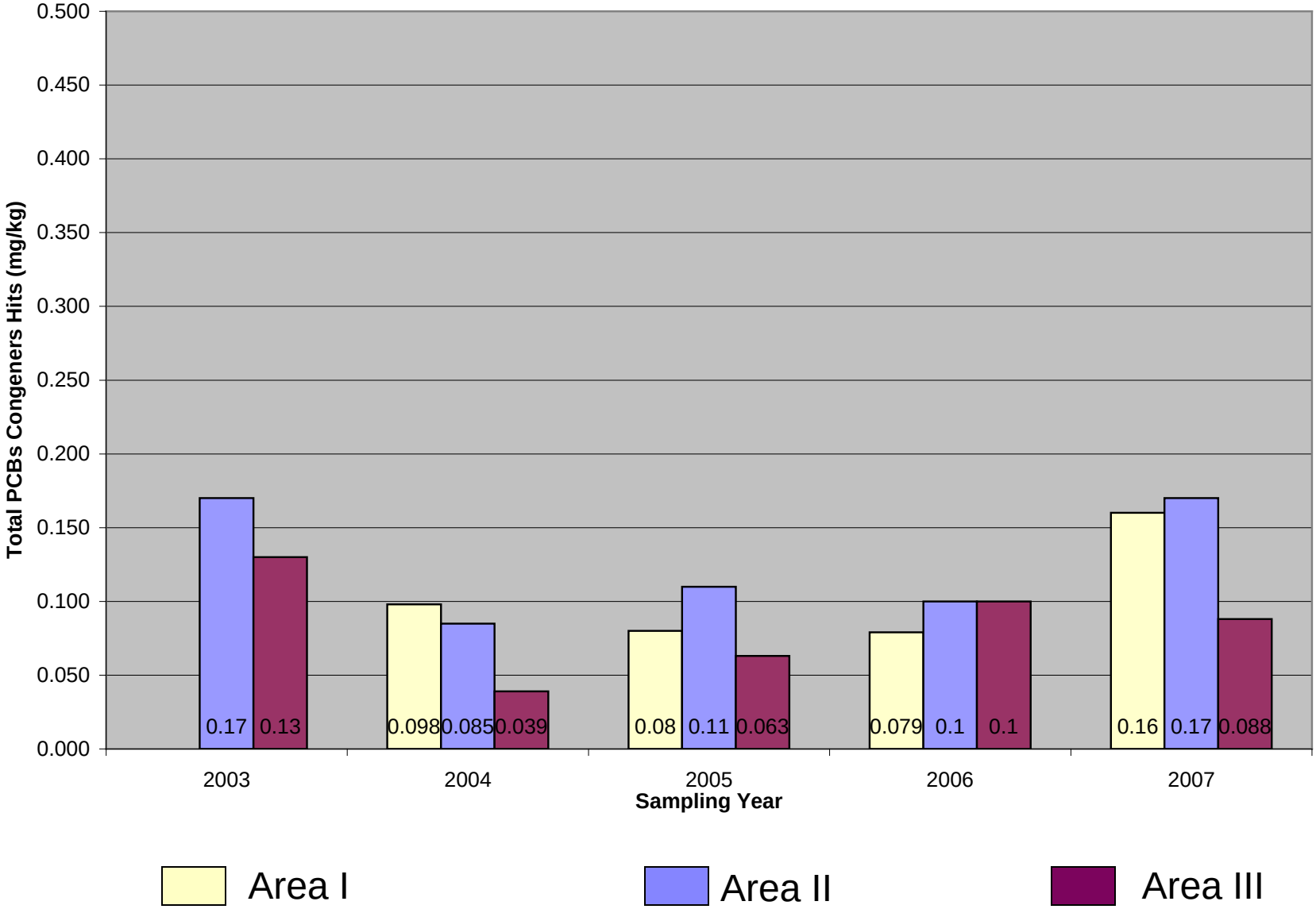
Average PCBs in Scup - ppm



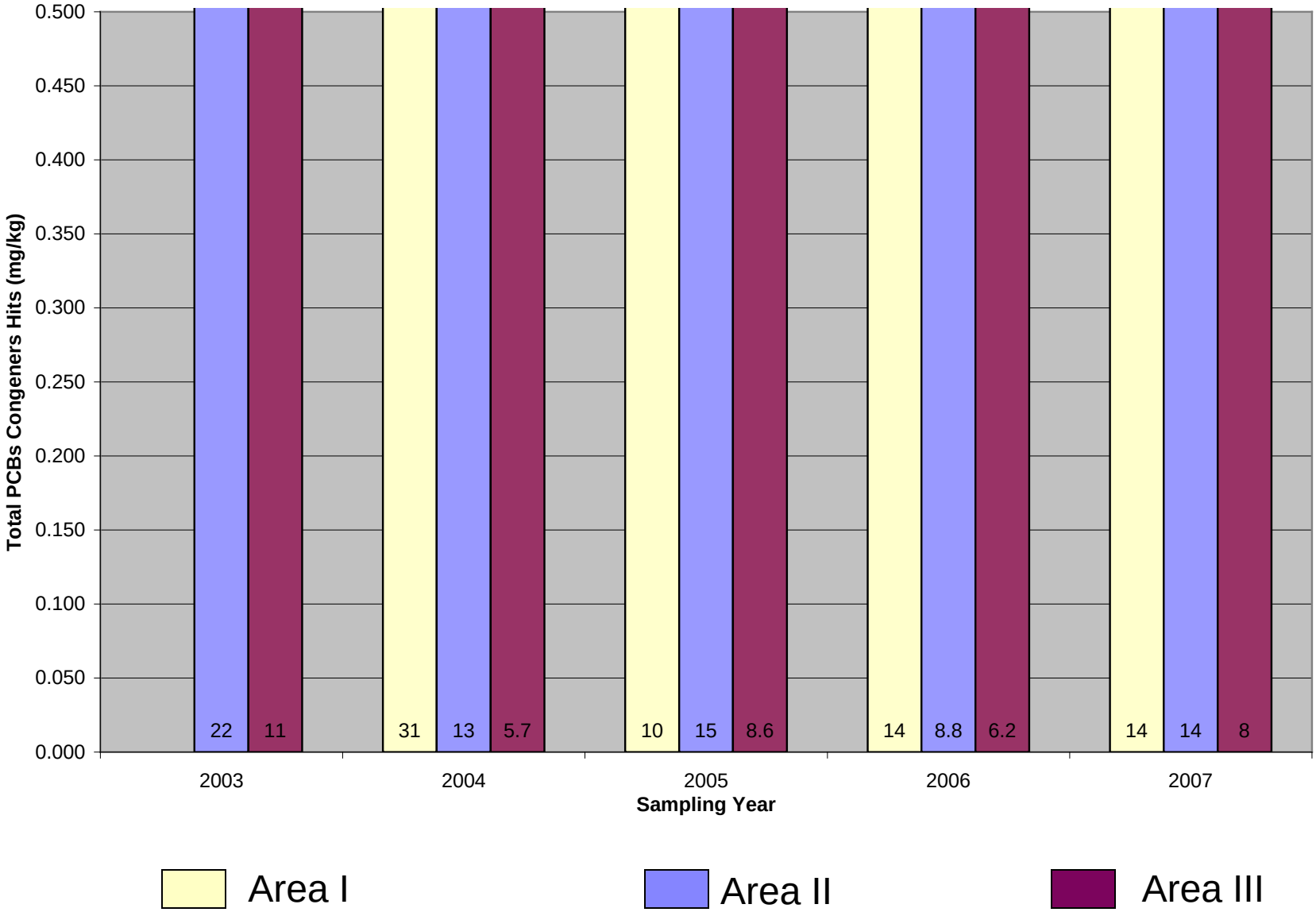
Average PCBs in Black Sea Bass - ppm



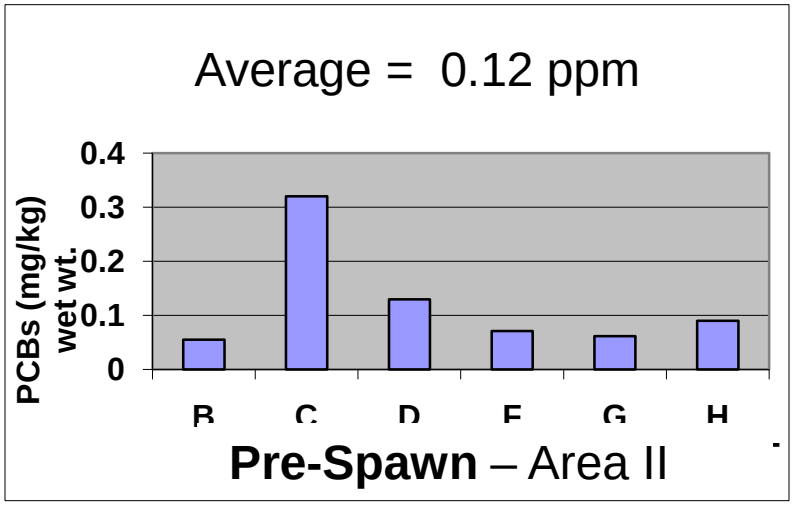
Average PCBs in Lobster Meat - ppm

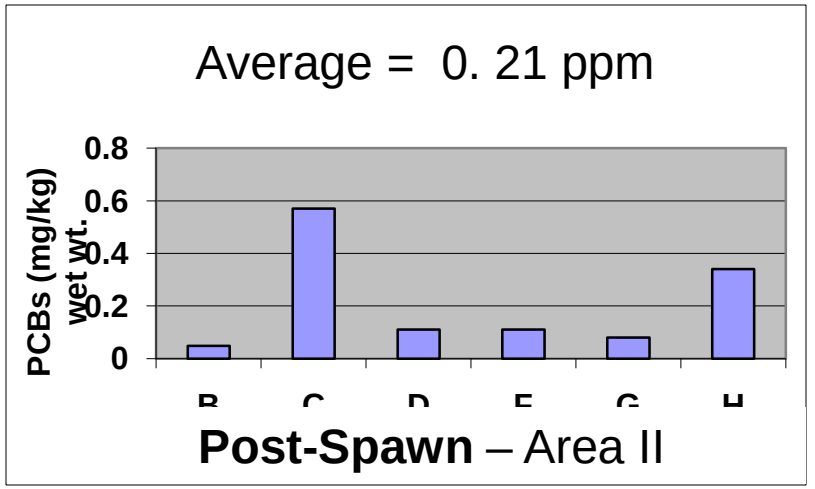


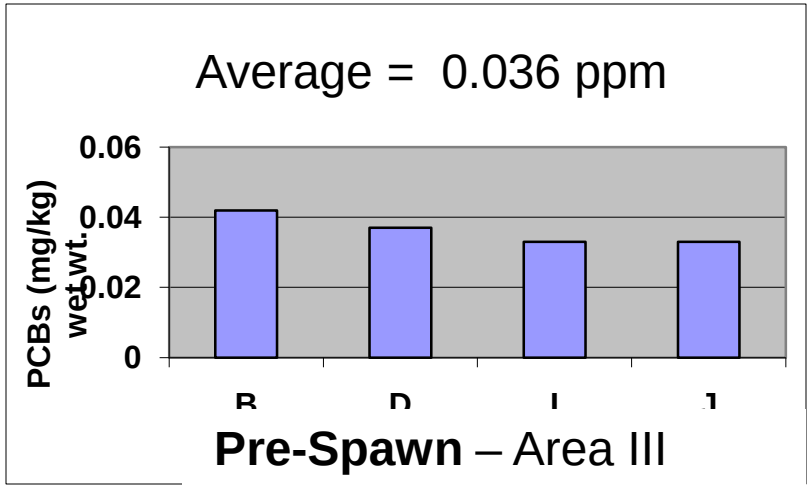
Average PCBs in Lobster Tomalley - ppm

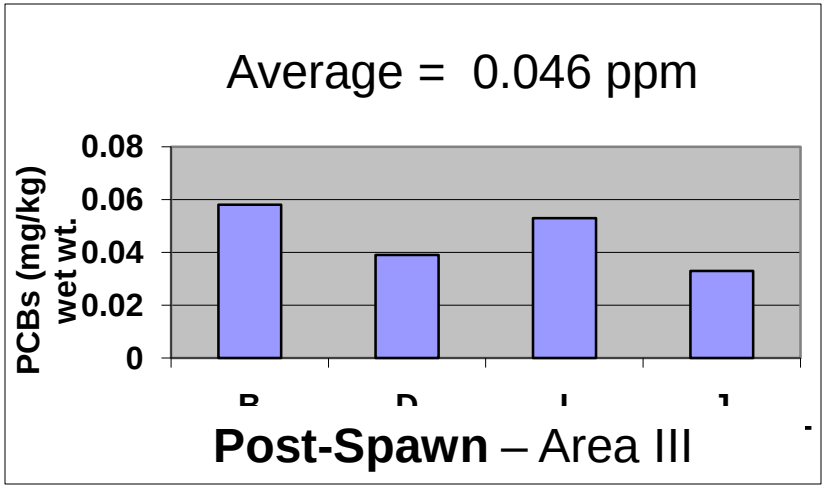


PCBs in QUAHOG also tested before and after spawning - 2009 data shown below









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