Update on Fish Sampling in CT

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April 26, 2017
CT DEEP & CT DPH
CCC Meeting, Kent CT

Connecticut Department of Energy and Environmental Protection

CT: Fish Tissue Sampling Locations

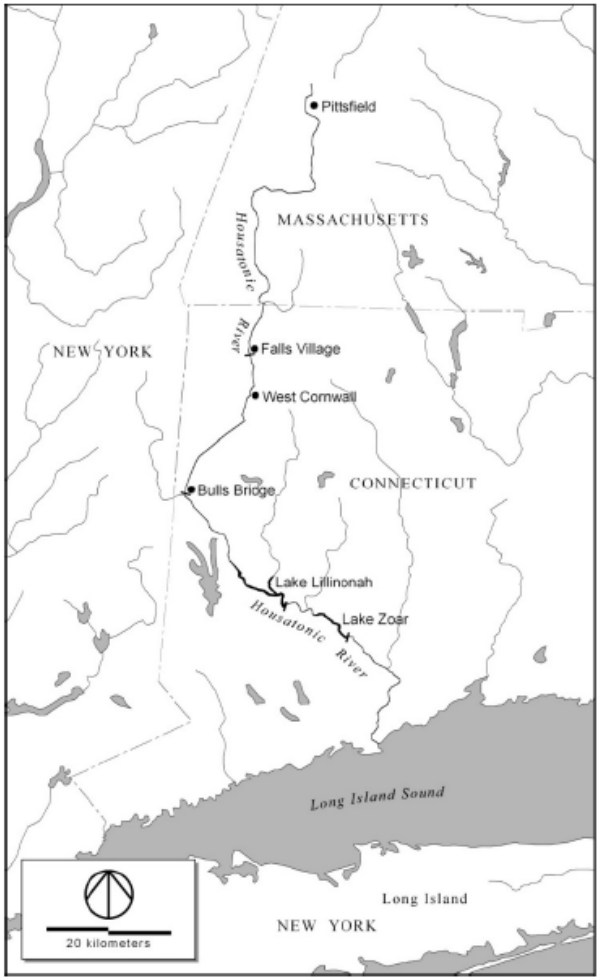


Figure 1. Map of the Housatonic River showing sampling stations for the 2014 fish and benthic insect collections in Connecticut. Smallmouth Bass were collected at West Cornwall, Bulls Bridge, Lake Lillinonah and Lake Zoar. Brown Trout and benthic insects were collected only at West Cornwall. Approximate locations of dams at Falls Village, Bulls Bridge, Lake Lillinonah and Lake Zoar are indicated by bars across the river.

Source: ANSDU. July 2016. PCB Concentrations in Fishes from the Housatonic River, Connecticut, 1984 2014, and in Benthic Insects, 1978 2014. Report No. 2016 2. Prepared for the General Electric Company.

CT: PCBs in Fish & Related Permit Activities

Cooperative Agreements → Monitoring, Consumption Advisory Support Activities → RCRA Permit

- Provide feedback to CT DEEP and EPA on expected submittals, including:
  - Institutional Control Plans for Biota Consumption Advisories
  - Baseline Monitoring Proposal

- Fish Consumption Advisories:
  - Until Long-Term Biota Performance Standards for CT are met, Fish Consumption Advisories provide guidance on how to include fish in your diet while remediation efforts proceed

Recent CT Fish Tissue Data

PCB Concentrations in two Species of Fish Caught in Four Locations along the Housatonic River in 2014

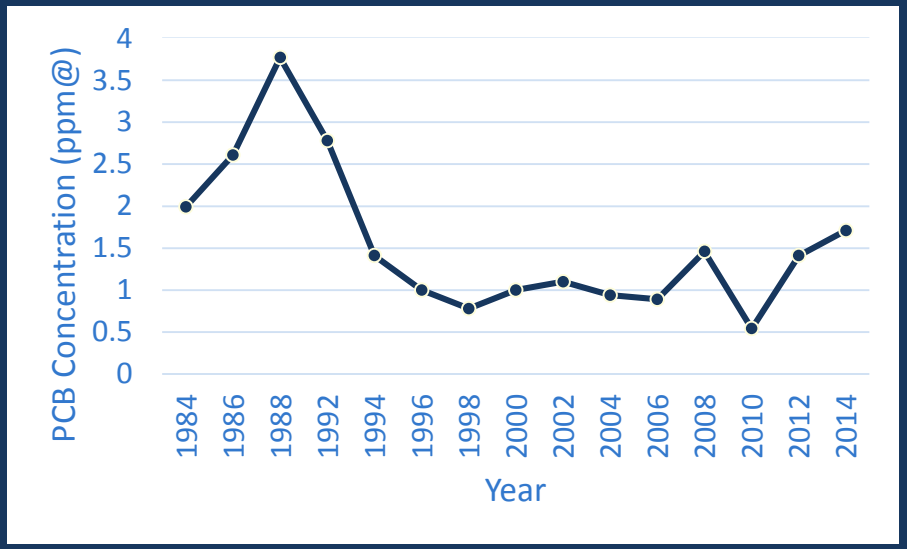
Location	Species	Number of Samples[+]	Average (Congener[*]) PCBs (ppm[^]) in 2014	Range (Congener Based) PCB (ppm)
West Cornwall	Smallmouth Bass	10	1.72	0.71-2.66
Bulls Bridge	Smallmouth Bass	10	1.25	0.28-2.65
Lake Lillinonah	Smallmouth Bass	10	1.52	0.25-5.72
Lake Zoar	Smallmouth Bass	10	1.45	0.25-3.59
West Cornwall	Brown Trout	30	2.54	0.92-6.68

[+]All samples were individual fillets and not composites
*The congener based analysis method sums the concentrations of all individual congeners (up to 121) quantitated by the analytical method.
^Parts per Million

Source: March 2017. CT DPH. DRAFT Health Consultation. Public Health Evaluation of Fish Contaminant Data in the Housatonic River Lake Zoar, Lake Lillinonah, West Cornwall and Bulls Bridge in Kent, Connecticut.

CT Fish Tissue Levels 1984-2014

Average Congener-Based[#] PCB Concentrations in Smallmouth Bass from the West Cornwall Sampling Station of the Housatonic River 1984-2014[*+]



Average Congener-Based[#] PCB Concentrations in Smallmouth Bass from Bull's Bridge Sampling Station in the Upper part of the Housatonic River 1984-2014[*]

#The congener based analysis method sums the concentrations of all individual congeners (up to 121) quantitated by the analytical method.

* Results for 1984 1990 were estimated by the Patrick Center for Environmental Research (2009) from aroclor based data using regressions of the natural logarithm (ln) of the congener based PCB concentration versus the ln of the aroclor based PCB concentration of each fish species that were established with data from 1992 and 1994. The aroclor based analysis method is a measurement of commercial mixtures of PCB compounds. Congener analysis was not performed before 1992.

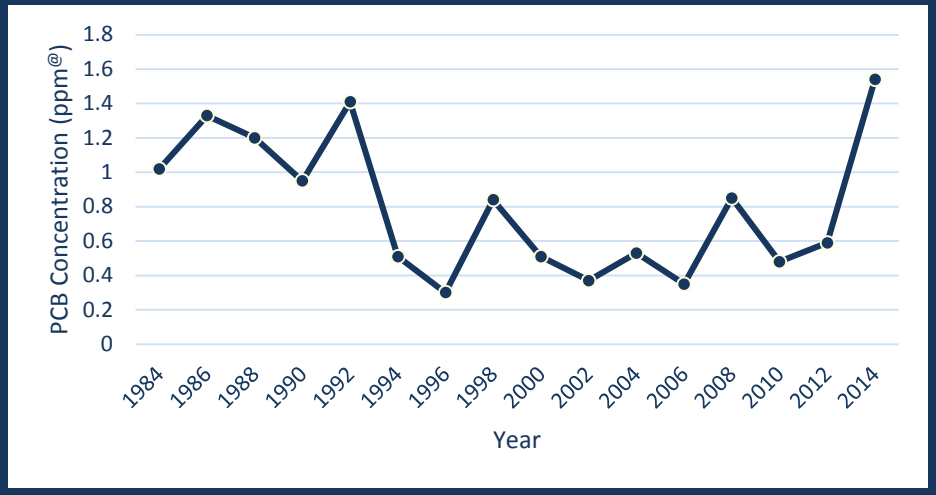
@parts per million

*Not sampled in 1990

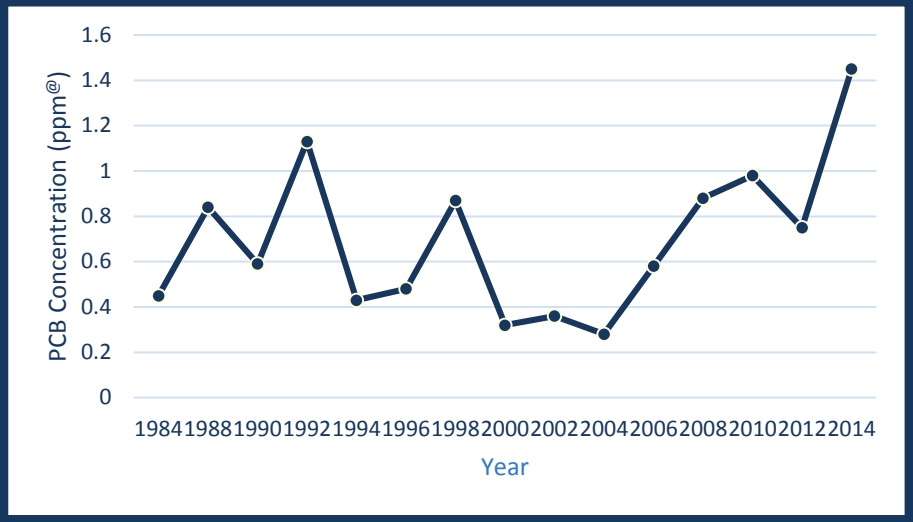
Source: March 2017. CT DPH. DRAFT Health Consultation. Public Health Evaluation of Fish Contaminant Data in the Housatonic River Lake Zoar, Lake Lillinonah, West Cornwall and Bulls Bridge in Kent, Connecticut.

CT Fish Tissue Levels 1984-2014

Average Congener-Based[#] PCB Concentrations in Smallmouth Bass from Lake Lillinonah 1984-2014[*]



Average Congener-Based[#] PCB Concentrations in Smallmouth Bass from Lake Zoar, 1984-2014[*+]



[#]The congener based analysis method sums the concentrations of all individual congeners (up to 121) quantitated by the analytical method.

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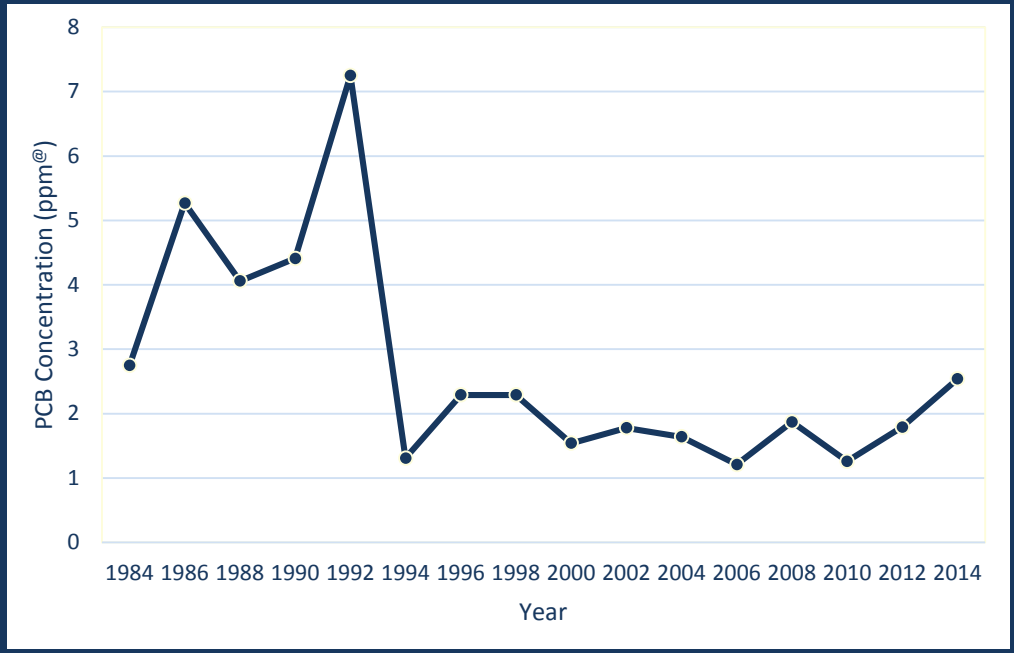
[@]parts per million

[*]Not sampled in 1990

Source: March 2017. CT DPH. DRAFT Health Consultation. Public Health Evaluation of Fish Contaminant Data in the Housatonic River Lake Zoar, Lake Lillinonah, West Cornwall and Bulls Bridge in Kent, Connecticut.

CT Fish Tissue Levels 1984-2014

Average Congener-Based[#] PCB Concentrations in Brown Trout in West Cornwall in the Upper Part of the Housatonic River from 1984-2014[*]



[#]The congener based analysis method sums the concentrations of all individual congeners (up to 121) quantitated by the analytical method.
* Results for 1984 1990 were estimated by the Patrick Center for Environmental Research (2009) from aroclor based data using regressions of the natural logarithm (ln) of the congener based PCB concentration versus the ln of the aroclor based PCB concentration of each fish species that were established with data from 1992 and 1994. The aroclor based analysis method is a measurement of commercial mixtures of PCB compounds. Congener analysis was not performed before 1992.
[@]parts per million

Source: March 2017. CT DPH. DRAFT Health Consultation. Public Health Evaluation of Fish Contaminant Data in the Housatonic River Lake Zoar, Lake Lillinonah, West Cornwall and Bulls Bridge in Kent, Connecticut.

2017 Updated CT Advisory

CT DPH

Updated 2017 Consumption Advisory for Four Fish Species in the Housatonic River and Its Lakes

Location	Fish Species	Restriction Category	Consumption Advisory	
			Previous (2013)	Updated (2017)
Housatonic River above Derby Dam^	Smallmouth Bass	D	1 Meal per 2 Months /Do Not Eat – High Risk	No Change
	Brown Trout	E	Do Not Eat- Everyone	No Change
Lakes Housatonic, Zoar, and Lillinonah	Smallmouth Bass	D	1 Meal/Month - Everyone	1 Meal per 2 Months /Do Not Eat – High Risk

^Includes West Cornwall and Bulls Bridge sampling locations.

Source: March 2017. CT DPH. DRAFT Health Consultation. Public Health Evaluation of Fish Contaminant Data in the Housatonic River Lake Zoar, Lake Lillinonah, West Cornwall and Bulls Bridge in Kent, Connecticut.

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