To: The File and Distribution Below

From: Ron Sloan

Date: January 19, 1998

Subject: Re-evaluation of the Hudson River Yearling Pumpkinseed

As part of an ongoing cooperative effort with General Electric Company and the evaluation of the PCB data in Hudson River fish, it was learned in discussing results with Dr. David Glaser of HydroQual, Inc. that the data files in use by the two parties were not in agreement. The only data where discrepancies were apparent involved yearling pumpkinseed. Unfortunately, these were the results reported at the hearing on the modification of the Order on Consent for Hudson Falls and which formed the basis for indicating an increase in PCB concentrations between 1995 and 1996.

Data files transmitted in earlier years and months for yearling pumpkinseed and other species were relatively complete for PCBs. Recipients of the earlier versions included General Electric Company and the USEPA. In an effort to fully update the DEC files, including incorporating other organochlorine (pesticide) results and improving information on collection locations for compatability with Geographic Information Systems (GIS), some of the editing steps eliminated for most years the lesser-chlorinated PCB mixtures. The mistake was not caught until HydroQual was attempting to duplicate the graphs with the data supplied to them earlier through GE. The data file is now correct insofar as can be determined. Further evaluation of the results indicate that an increase from 1995 to 1996 in the total PCB concentrations in yearling pumpkinseed from Stillwater and Albany did not occur. The recalculated decrease for the Stillwater Pool, however, was statistically significant. Changes at Albany (levels were down) and the Thompson Island Pool (levels did go up) were not statistically significant.

Other species were not affected by the editing changes. However, before any additional evaluations on the updated data files are made, close scrutiny of the data and interpretation of the results will occur.

Even though the error happened, the final message from the evaluation of the fish data for many species and several locations is that the system responds to changes. The early declines following the cessation of PCB discharges resulted, within a relatively short period, in a relatively stable system for nearly two decades. Although other short term gains, due to reducing effects from other perturbations, can reduce concentrations, there is still an inherent stability to the contamination pattern. Contamination is still too high.

The purpose of this letter is to correct the record and to provide an updated version of the graphs and charts presented at the January 6, 1998 proceeding. This incident is an example for all interested parties to exercise diligence in the determination of the complete, objective Hudson River PCB chronicle. I personally want to express my deep regret over the error and apologize for any inconvenience or problems this oversight caused. Although everyone contacted about this problem was understanding, there was a uniform desire to correct the record and to continue the monitoring of the fish for PCB trends. Thank you for your sincere and supporting expressions.

This letter and the updated graphs become part of the January 6, 1998 hearing record.

Ronald Sloan, Ph.D.
Research Scientist

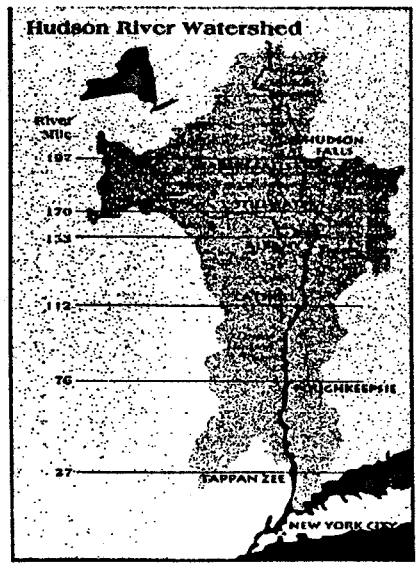
PCBs IN HUDSON RIVER FISH

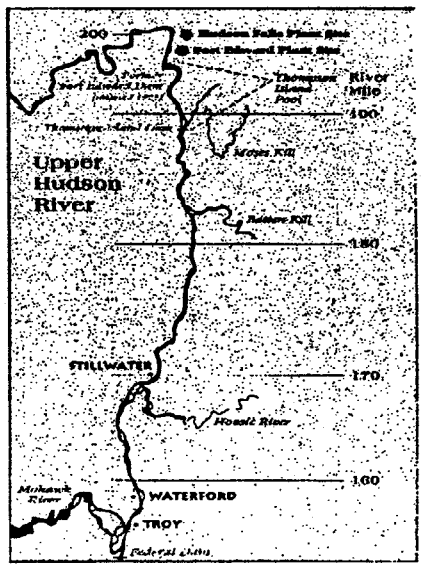
January 6, 1998

PCBs IN HUDSON RIVER FISH

UPDATED for CORRECT DATA

January 6, 1998 (January 21, 1998)

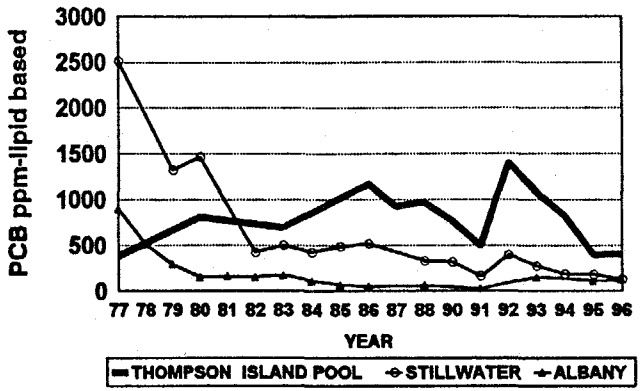




318674

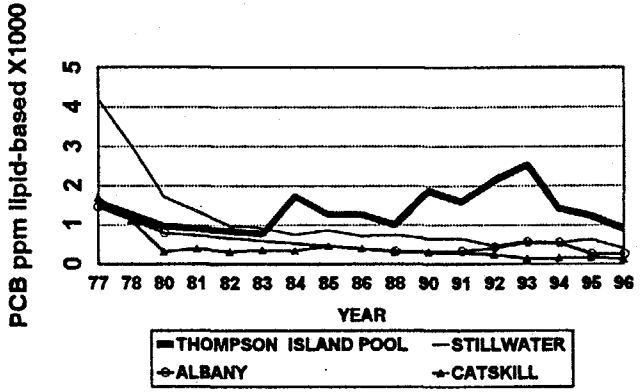
BROWN BULLHEAD

1977 & prior - 1996



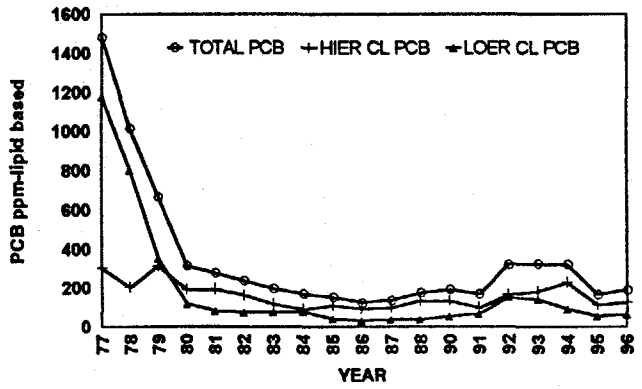
BLACK BASS

PCB CONCENTRATIONS 1977 - 1996



HUDSON RIVER TREND IN PCBs

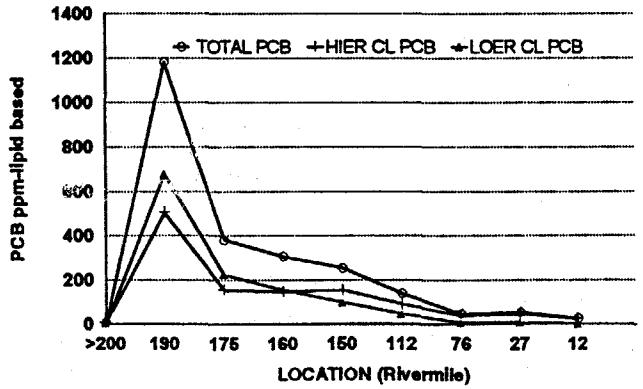
1977 - 1996 ALBANY / TROY



Species combined

HUDSON RIVER PCBs IN FISH

by LOCATION 1991 - 1995

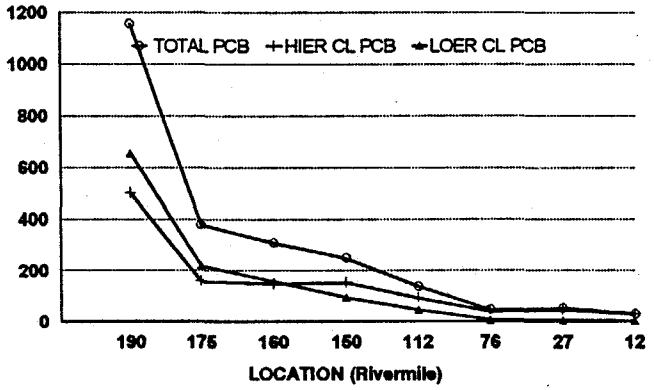


Species - years combined

318675

HUDSON RIVER PCBs IN FISH

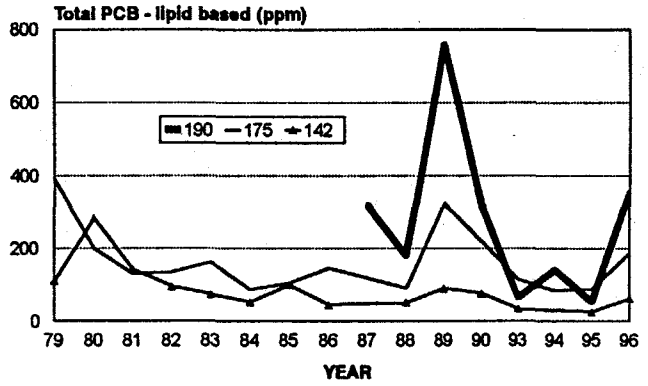
by LOCATION 1991 - 1996



Species - years combined

YEARLING PUMPKINSEED

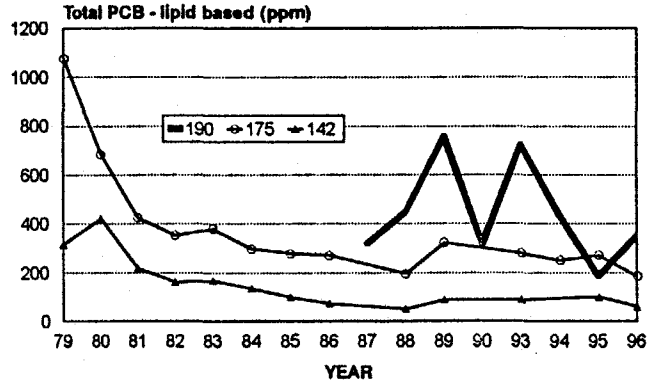
THREE LOCATIONS by YEAR



Rivermiles provided for locations (1/6/98)

YEARLING PUMPKINSEED

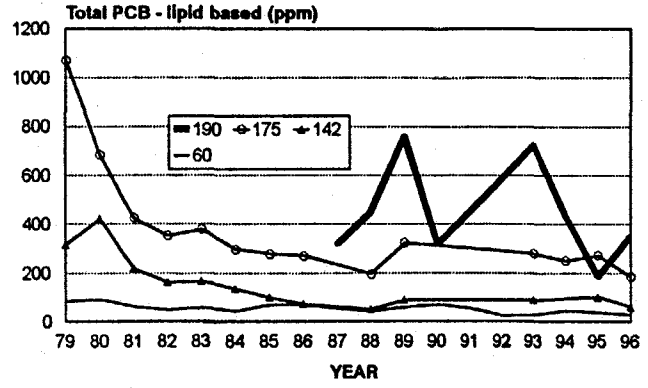
THREE LOCATIONS by YEAR (corrected)



Rivermiles provided for locations (1/21/98)

YEARLING PUMPKINSEED

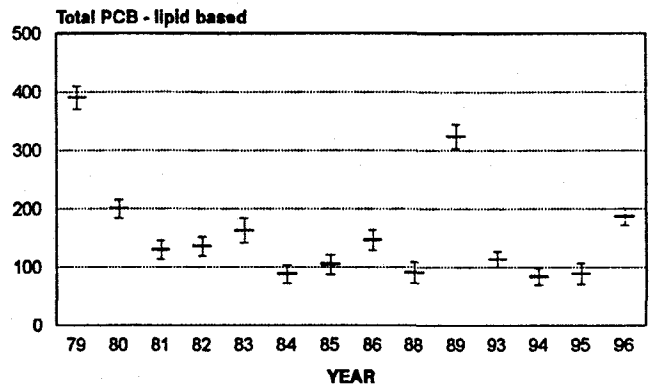
FOUR LOCATIONS by YEAR (corrected)



Rivermiles provided for locations (1/21/98)

STILLWATER - RM 175

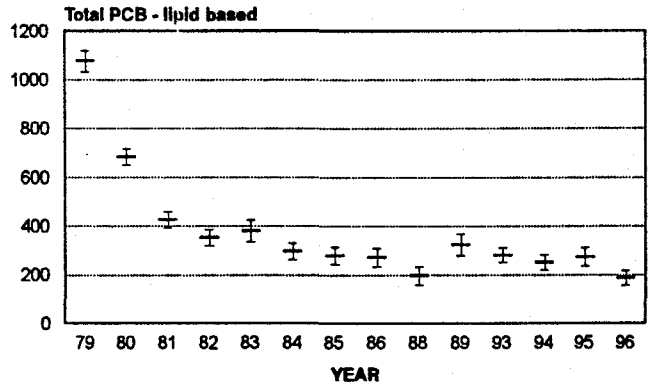
YEARLING PUMPKINSEED



1/6/98

STILLWATER - RM 175

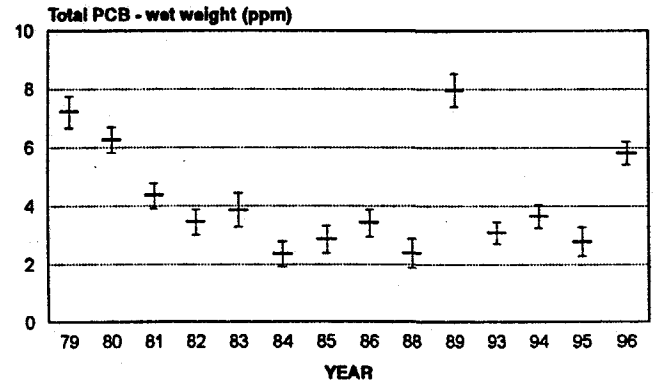
YEARLING PUMPKINSEED (corrected)



1/21/98

STILLWATER - RM 175

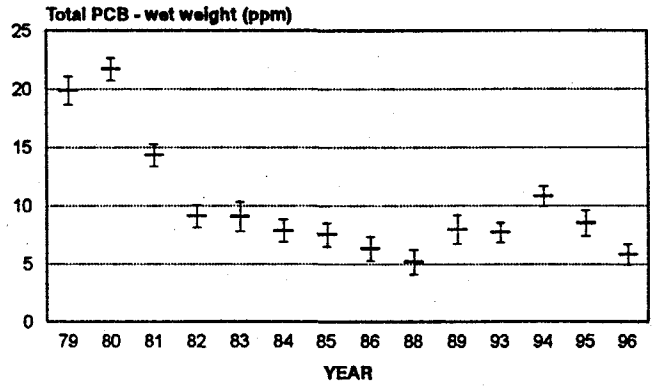
YEARLING PUMPKINSEED



1/6/98

STILLWATER - RM 175

YEARLING PUMPKINSEED (corrected)



1/21/98

318677

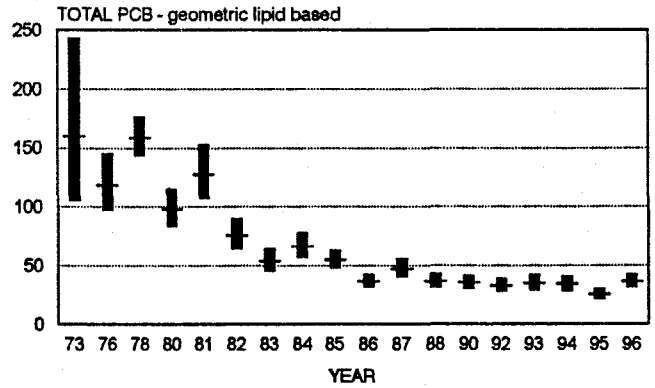
HUDSON RIVER STRIPED BASS

PCB CONDITIONS NOTED OVER THE YEARS

- NO RELATIONSHIP TO LENGTH -- WAS OFTEN NEGATIVE
- SIGNIFICANT CORRELATIONS WITH LIPID -- USUALLY
- LOG10 TRANSFORMATIONS OF LIPID-BASED VALUES - MORE VALID FOR DESCRIBING TRENDS
- FALL SAMPLES HIGHLY VARIABLE - APPARENT INCONSISTENCIES YEAR TO YEAR - BETTER SAMPLING NEEDED TEMPORALLY AND SPATIALLY OR IGNORE THEM

HUDSON RIVER STRIPED BASS

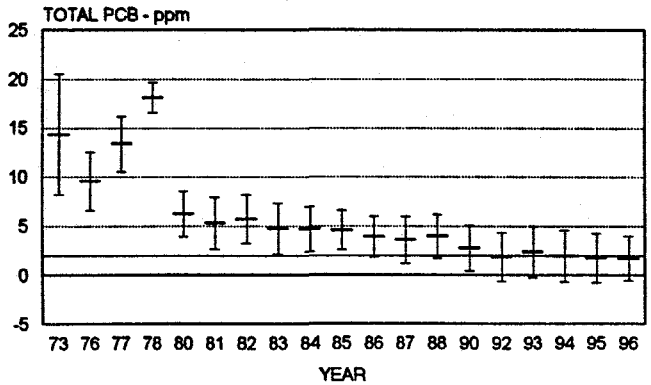
PCB TEMPORAL TREND



SPRING FISHERY - POUGHKEEPSIE TO NYC

HUDSON RIVER STRIPED BASS

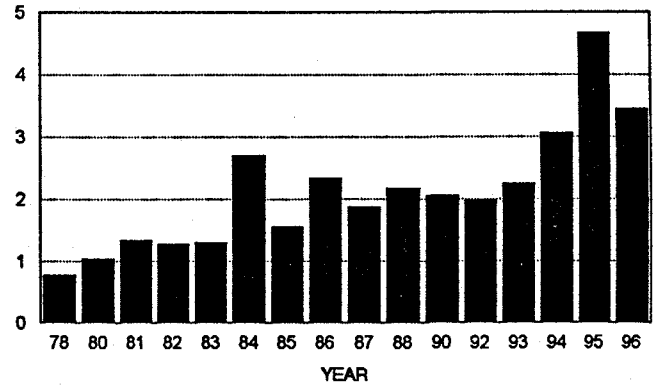
PCB TEMPORAL TREND



SPRING FISHERY - POUGHKEEPSIE TO NYC

HUDSON RIVER STRIPED BASS

SEX RATIOS - MALES :FEMALES

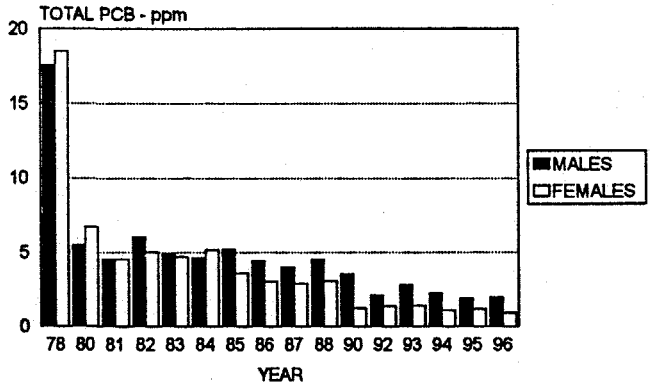


SPRING FISHERY - POUGHKEEPSIE TO NYC

3118678

HUDSON RIVER STRIPED BASS

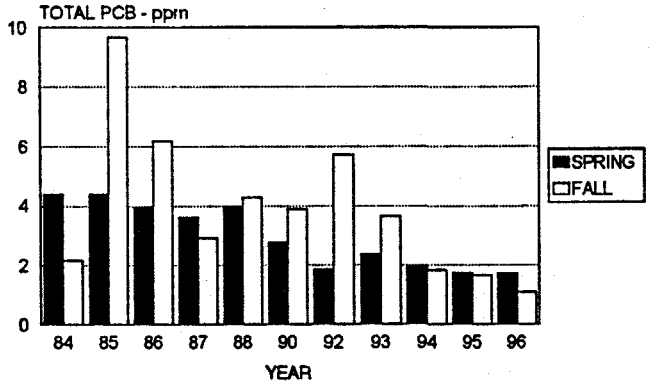
SEX DIFFERENCES



SPRING FISHERY - POUGHKEEPSIE TO NYC

HUDSON RIVER STRIPED BASS

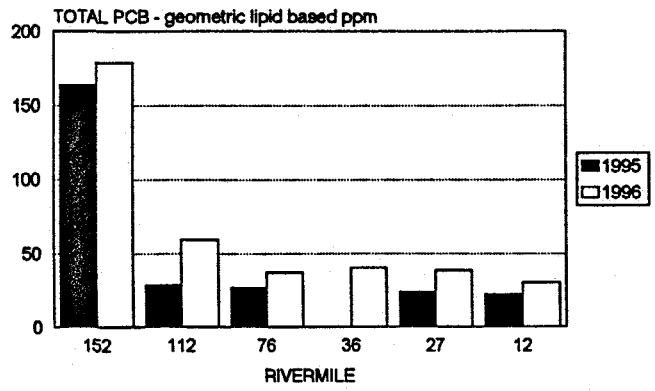
SEASONAL DIFFERENCES



POUGHKEEPSIE AND POINTS SOUTH

HUDSON RIVER STRIPED BASS

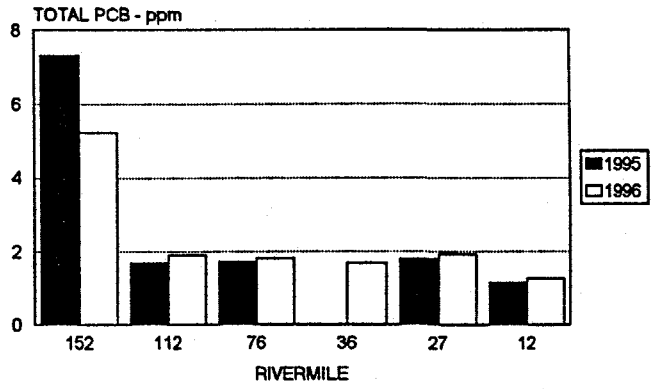
1995 - 96 PCB SPATIAL GRADIENT



SPRING FISHERY

HUDSON RIVER STRIPED BASS

1995 - 96 PCB SPATIAL GRADIENT



SPRING FISHERY

318679

CONCLUSIONS

PCB IN HUDSON RIVER STRIPED BASS

- Total PCB concentrations have declined
- Concentrations in spring for the lower river average at or below 2 ppm
- Concentrations highest further upstream
- Males have higher concentrations than females
- No relationship between PCBs and length
- PCB concentrations related to fat content
- Sex ratios shifted to favor males - currently ratio is 3.5:1
- Seasonal differences inconsistent

January 6, 1998

CONCLUSIONS

PCB IN HUDSON RIVER RESIDENT SPECIES

- Initial declines in fish PCB concentrations, except in the TIP, occurred following the cessation of direct discharges in 1976 - 1977.
- Total PCB concentrations remained relatively stable through 1980s into the 1990s.
- Concentrations decline with distance downstream.
- PCB concentrations in fish are sensitive to changes in the system.
- Ho: Increases in 1996 for yearling pumpkinseed may portend increases for other species in 1997.

January 6, 1998

CONCLUSIONS

PCB IN HUDSON RIVER RESIDENT SPECIES

- Initial declines in fish PCB concentrations, except in the TIP, occurred following the cessation of direct discharges in 1976 - 1977.
- Total PCB concentrations remained relatively stable through 1980s into the 1990s.
- Concentrations decline with distance downstream.
- PCB concentrations in fish are sensitive to changes in the system.
- To determine actual trends in fish PCB levels, following remedial activities, is necessitated by expediting the 1997 analyses and continuing to monitor.

January 6, 1998 (updated January 21, 1998)

318680