

31<sup>st</sup> Annual Meeting of the Society of Environmental Toxicology and Chemistry  
November 7 – 11, 2010  
Portland, Oregon

Poster #MP146

Title: Environmental Contaminants in Tissues of Sturgeon from Two Maine Rivers

---

Steven E. Mierzykowski, U.S. Fish and Wildlife Service, 17 Godfrey Drive, Suite 2, Orono, Maine 04473,  
(207) 866-3344 x 112, [steve\\_mierzykowski@fws.gov](mailto:steve_mierzykowski@fws.gov)

**Abstract:** Prior to the current investigation, contaminant residue data for federally-listed endangered shortnose sturgeon (*Acipenser brevirostrum*) and for Atlantic sturgeon (*Acipenser oxyrinchus*) that occur in Maine rivers did not exist. In 2006 and 2009, eleven dead sturgeon were opportunistically collected from the Penobscot River and Kennebec River. Under federal permits, tissues of six sturgeon (two Atlantic, four shortnose) from the Penobscot River and five shortnose sturgeon from the Kennebec River were analyzed for organochlorine compounds and trace elements. Total DDT concentrations in fillet (max. 54 ng/g wet weight), liver (max. 21 ng/g), and gonad (max. 157 ng/g) tissue samples were well below a suggested tissue threshold-effect level of 600 ng/g. Concentrations of Total PCBs were below the detection limit (< 5 ng/g wet weight) in all fillet, liver, and gonad samples of Penobscot River sturgeon, and detected in all fillet samples of Kennebec River sturgeon (mean 864 ng/g, max. 1,900 ng/g). Except for cis-nonachlor in one shortnose sturgeon fillet sample from the Penobscot River (max. 24 ng/g), other organochlorine compounds in tissue samples were either below the detection limit (< 1 ng/g) or sporadically detected slightly above the detection limit. Mean mercury concentration in fillets of Atlantic sturgeon from the Penobscot River (0.18 µg/g wet weight) appeared higher than mean mercury levels detected in shortnose sturgeon from the Penobscot River (0.42 µg/g) and Kennebec River (0.55 µg/g). Mercury levels in eight of the 11 sturgeon fillet samples exceeded a suggested tissue threshold-effect concentration of 0.20 µg/g. Concentrations of 18 other trace elements in sturgeon tissue samples appeared consistent with results reported in other sturgeon studies. Due to the paucity of data for these two species in Maine, analyses of sturgeon carcasses for contaminant residue burdens should be continued.