

National Rivers and Streams Assessment: Fish Tissue Contaminants

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Several external reports have identified the need for the U.S. Environmental Protection Agency (EPA) and States to improve water quality monitoring and analysis at multiple scales. They also recommended that we develop an approach to make statistically valid inferences about the nation's water quality in order to achieve the following objectives: (a) support key management decisions, (b) promote a uniform and consistent approach to ambient water monitoring and data collection to support core water quality programs, and (c) encourage the identification of some common indicators of environmental condition. In 2003, these scientific needs were echoed in EPA's Report on the Environment, which specified the lack of sufficient information to provide a national answer, with confidence and scientific credibility, to the question, "What is the condition of U.S. waters and watersheds?" The National Association of Public Administrators concluded that improved water quality monitoring was necessary to help States make more effective use of limited resources. In response to these reports, EPA's Office of Water (OW), in collaboration with the Office of Research and Development (ORD) and the 10 Regional offices, initiated the National Rivers and Streams Assessment (NRSA) in 2008. The NRSA is an assessment of the condition of rivers and streams in the conterminous U.S. that is using consistent field and laboratory protocols and a statistical survey sample of over 1800 sites across all stream orders. This approach will permit development of statistically valid inferences on water quality, biological assemblages, and fish tissue contaminants at multiple spatial scales.

Currently, fish are being collected from 1200 streams classified as fifth order and larger, which includes a representative subset of 170 urban river sites. ORD will analyze fish fillets for 21 pesticides, 20 congeners of PCBs, 6 congeners of PBDEs, mercury, selenium, % lipids and % moisture at all sites. At the urban river sites, fillets will also be analyzed for the occurrence and extent of selected contaminants of emerging concern (CEC), including pharmaceuticals and personal care products - chiefly synthetic musk compounds. Under collateral agreements with ORD, NRSA samples from 15 urban sites on the Lower Mississippi River will be analyzed for perfluorinated compounds (PFOS/PFOA). In addition, whole-fish samples from all 57 urban and non-urban sites on the Lower Mississippi River will be analyzed for the same legacy compounds as the fillets. This will permit an important comparison between human and wildlife exposures to contaminants in the river. The objective of the fish tissue study will be to assess the extent of fish tissue contamination by legacy contaminants across U.S. rivers and streams, along with contaminants of emerging concern selected for analysis in urban rivers. ORD will provide OW with a final report of findings by the end of 2011, and will also produce several publications on the survey results.

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