

EPA's National Study of Chemical Residues in Lake Fish Tissue

Leanne Stahl¹, Blaine D. Snyder², and Jennifer Pitt²

¹U.S. EPA, OW/OST, Mail Code 4305T, 1200 Pennsylvania Avenue N.W., Washington, DC 20460

²Tetra Tech, Inc., 10045 Red Run Blvd., Suite 110, Owings Mills, MD 21117

Biographical Sketches of Authors

Leanne Stahl is an environmental scientist in the Office of Science and Technology within the U.S. Environmental Protection Agency's Office of Water, with training and experience as a fisheries biologist. Since 1999, she has served as the project manager of the National Study of Chemical Residues in Lake Fish Tissue, moving the project from its planning phase into full implementation. Leanne moved to EPA's Office of Water from the National Oceanic and Atmospheric Administration in 1990 and has worked in a variety of water programs over the last 14 years.

Blaine Snyder is employed as a principal scientist and director of the Baltimore, Maryland office of Tetra Tech, Inc. He is an American Fisheries Society Certified Fisheries Scientist, specializing in the design, implementation and interpretation of environmental impact assessments and aquatic ecological investigations. Mr. Snyder has been involved with the National Study of Chemical Residues in Lake Fish Tissue since the preliminary planning stages, and currently serves as the study's National Sampling Support Manager. Together with coauthor Jennifer Pitt, he has supported the U.S. EPA in the development of the study design, sampling methods, and quality assurance plan, and continues to coordinate all national sampling activities.

Abstract

The Office of Water is conducting the largest national freshwater fish contamination survey undertaken by EPA, the National Study of Chemical Residues in Lake Fish Tissue. Two features distinguish this study from other fish monitoring programs. It includes the largest set of chemicals ever studied in fish, and it is the first national fish contamination survey to have sampling sites statistically selected. When completed in 2005, this study will provide the first national estimates of mean concentrations and distributions of 268 chemicals in fish. It will also provide a national baseline for assessing progress of pollution control activities limiting release of these chemicals into the environment.

Partnerships made this study possible. Agencies in 47 states, three tribes, and two other federal agencies collaborated with EPA for four years to collect fish from 500 lakes and reservoirs in the lower 48 states. Sampling teams applied consistent methods nationwide to obtain samples of predator and bottom-dwelling species from each lake. EPA is analyzing the fish tissue for mercury, arsenic, dioxins and furans, PCBs, pesticides, and other organic chemicals such as phenols.

Results for the first three years of the study show that dioxins and furans, PCBs and mercury were detected in predator species at all sites sampled during the three years. Several chemicals have not been detected in the fish samples, including organophosphate pesticides and other organic chemicals, such as hexachlorobenzene.