

## A Database of Mercury in the Fishery Resources of the Gulf of Mexico

Frederick C. Kopfler<sup>1</sup>, Brent Ache<sup>2</sup>, Jennifer Field<sup>3</sup>, and Don Axelrad<sup>4</sup>

<sup>1</sup>U.S. EPA, Gulf of Mexico Program Office, Mail Code: EPA/GMPO, Stennis Space Center, MS 39529

<sup>2</sup>NOAA/NOS/MBO, SSMC-4, Room 9437, 1305 East West Highway, Silver Spring, MD 20910

<sup>3</sup>Battelle, 1400 Centrepark Blvd., Suite 1005, West Palm Beach, FL 33401

<sup>4</sup>FL DEP, MS-6540, Room 669A, 2600 Blair Stone Road, Tallahassee, FL 32399-2400

### Biographical Sketch

Frederick Kopfler received a PhD in Food Science from LSU. After completing a postdoctoral appointment with USDA, he worked for the Public Health Service investigating the pesticide and trace metal contaminants in shellfish. As a charter employee of the USEPA he worked on the health effects of chemical contaminants in drinking water. In 1989 he joined the newly formed Gulf of Mexico Program to work on public health issues associated with the use of the Gulf's waters and its seafood products including chemical contaminants of seafood; sewage pollution of shellfish growing waters and recreational waters; and harmful algal blooms.

Brent Ache is a physical scientist with NOAA's Ocean Service, Special Projects Division. He holds a master's degree in Coastal Environmental Management from Duke University's Nichols School of the Environment.

Jennifer Field is an environmental scientist with Battelle, specializing in marine ecology. In addition to designing and conducting field sampling studies, she has several years experience analyzing environmental data. She also has experience conducting ecological and human health risk assessments and environmental impact assessments. She has a master's degree in biological science from Old Dominion University.

Don Axelrad is an environmental administrator in the Mercury Program of the Florida Department of Environmental Protection (DEP), Tallahassee. Don received a B.S. degree in Chemistry from Wayne State University, an M.S. degree in Environmental Health Science from the University of Michigan, and a Ph.D. in Marine Science from the College of William and Mary (1974). Subsequently, Don worked for the Department of Conservation, Victoria, Australia for 17 years before joining DEP. For the past 7 years, he has been involved in managing research on mercury sources, biogeochemistry, bioaccumulation, wildlife and human toxicology and model development, particularly directed at identifying options for reducing mercury concentrations in Everglades' fish and wildlife.

### Abstract

Mercury finds its way into aquatic ecosystems in a variety of ways. Atmospheric deposition is one major pathway. Not only can mercury in the atmosphere cross political and jurisdictional boundaries, migratory pelagic predator fish do also. After a preliminary assessment indicated that mercury was a widespread contaminant in edible tissue of fish taken from the Gulf, the Gulf of Mexico Program Management Committee directed the Program Office to conduct an analysis of the occurrence of mercury in the fishery resources of the Gulf of Mexico. A steering committee consisting of persons with knowledge of environmental mercury analysis from state health and environmental agencies of the five states surrounding the Gulf of Mexico, EPA, FDA, and NOAA was formed to oversee the project. Emphasis was placed on data collected during and after 1990 as the steering committee concluded that analytical methods had been improved and standardized sufficiently that the results from the various laboratories were comparable.

Tissue monitoring data sets from Florida, Alabama, Mississippi, Louisiana, and Texas state monitoring programs; the EPA EMAP; the NOAA Mussel Watch Program; and the NMFS GulfChem Study were acquired. These data sets were aggregated into a regional database, which is available over the internet with data mapper software that allows the user to query the database, produce maps of the query results, and zoom in to specific estuaries. The database was updated in September 2003, and contains almost 27,000 records. The database can also be downloaded in its entirety for use on a local computer.