Mercury Accumulation in Marine Life from the Gulf of Mexico

Mercury is a global pollutant that is known to bioaccumulate in organisms and biomagnify up the marine food web, so that top predators including sharks, tunas, marlin, and king mackerel have an elevated concentration in their muscle tissue. The main source of mercury exposure to humans is through seafood consumption and can result in deleterious health effects. The Gulf of Mexico contains an elevated concentration of mercury relative to other areas around the United States. All 5 Gulf States (TX, LA, MS, AL, FL) have fish consumption advisories and several species, including swordfish, tilefish, shark, and king mackerel exceed the Food and Drug Administration (FDA) 1ppm action level. To understand the impact of mercury exposure on the health of the Gulf ecosystem, as well as the risk to human health from consuming contaminated seafood, we are undertaking extensive studies to determine the concentration of mercury in invertebrates, bony fish, sharks, and cetaceans, and to identify factors that influence these values. The findings of these studies will be of interest to research scientists, environmental groups, federal and state government agencies, the medical community, and the general public who want to know which seafood to eat and how much. Future studies will focus on determining the selenium:mercury molar ratios in Gulf seafood and the importance of maternal transfer as a source of mercury in bony fish and sharks.