

Human Exposure and Health Effects Associated with Mercury in the Great Lakes Region

Lake Ontario Monitoring and Modeling Meeting

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Panel Members

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- Sylvie Boucher de Grosbois, University of Quebec at Montreal



Spectrum of Health Effects & Credibility

Children IQ Deficits

Adult Cardiovascular Effects

From fetal exposures above MeHg RfD

From any fetal MeHg exposures

Male consumers of non-fatty freshwater fish with high MeHg

Male fish consumers

All fish consumers

Decreasing Credibility



Source: E. Guellar, Johns Hopkins Med. Center



RESEARCH & DEVELOPMENT

Building a scientific foundation for sound environmental decisions

$$\text{Hg Exposure} = \Sigma (\text{Meal Frequency} \times \text{Meal Size} \times \text{Hg in Fish})$$

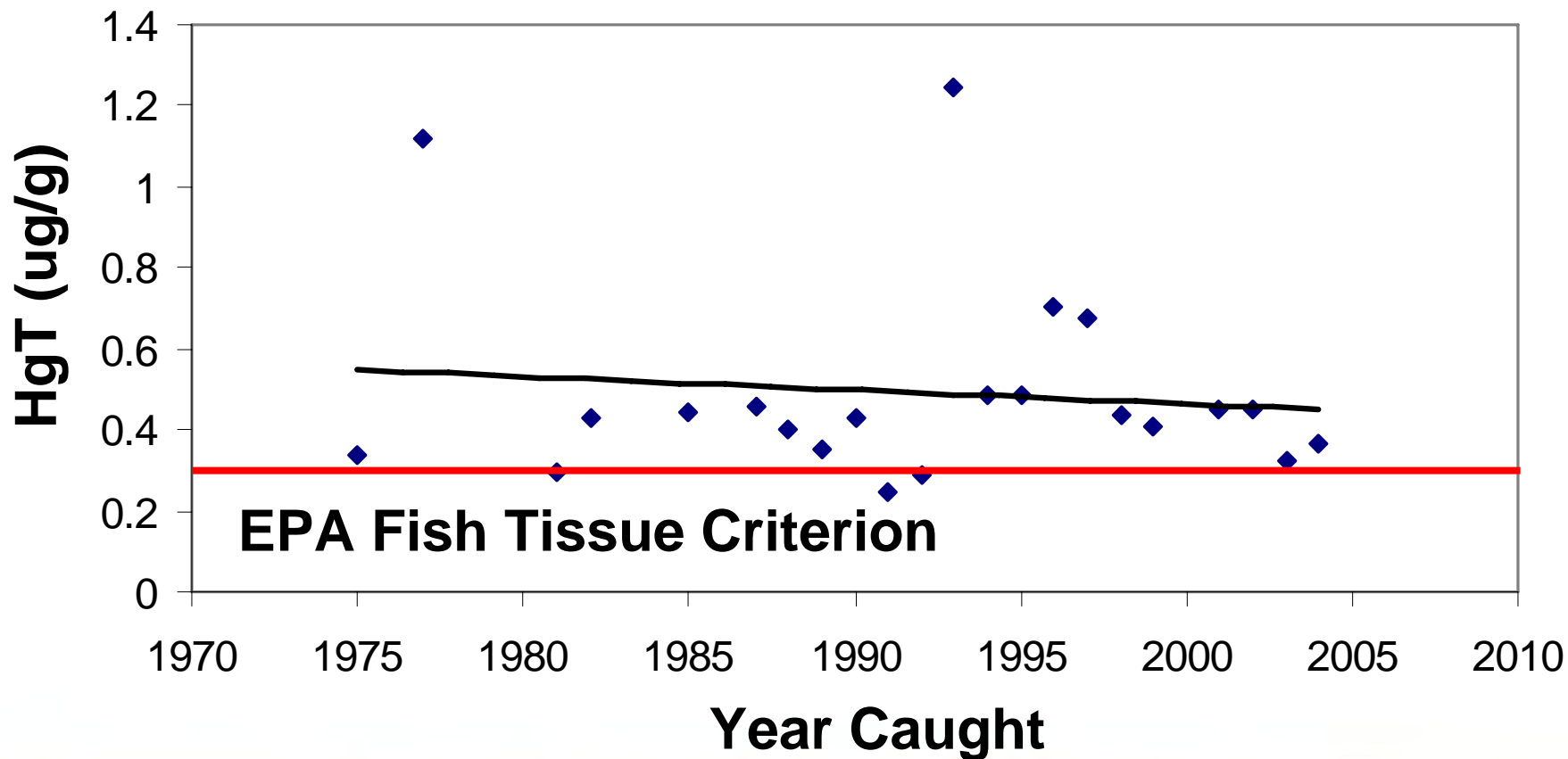
By Species
Within Species
Geographic Variability

Dietary Surveys = Meal Frequency, Meal Size, Species Selection



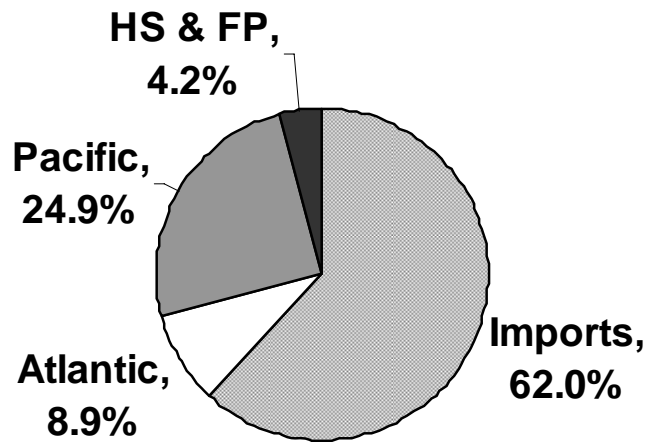
Recreationally Caught Species

Lake Ontario Walleye (~1700 g)

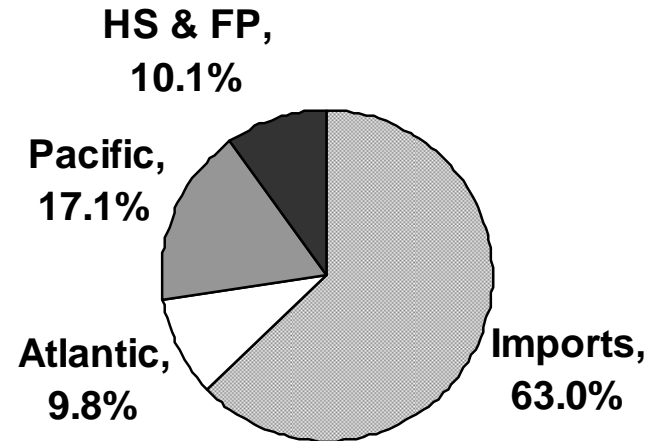


Exposure of U.S. Consumers through Seafood Market

(a) Supply – All Species



(b) Hg Intake – All Species

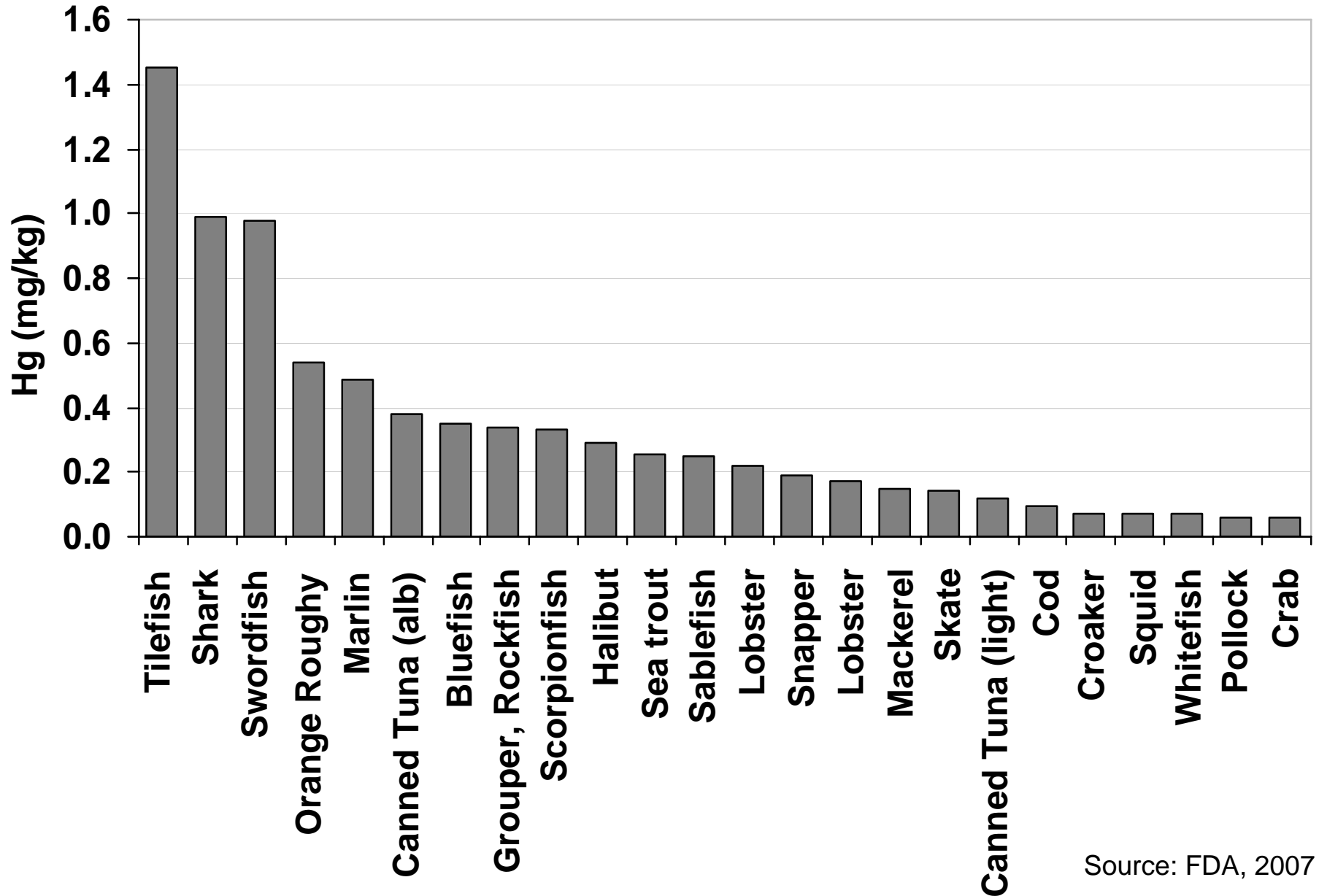


HS & FP = High Seas and Foreign Ports

Source: Sunderland, 2007

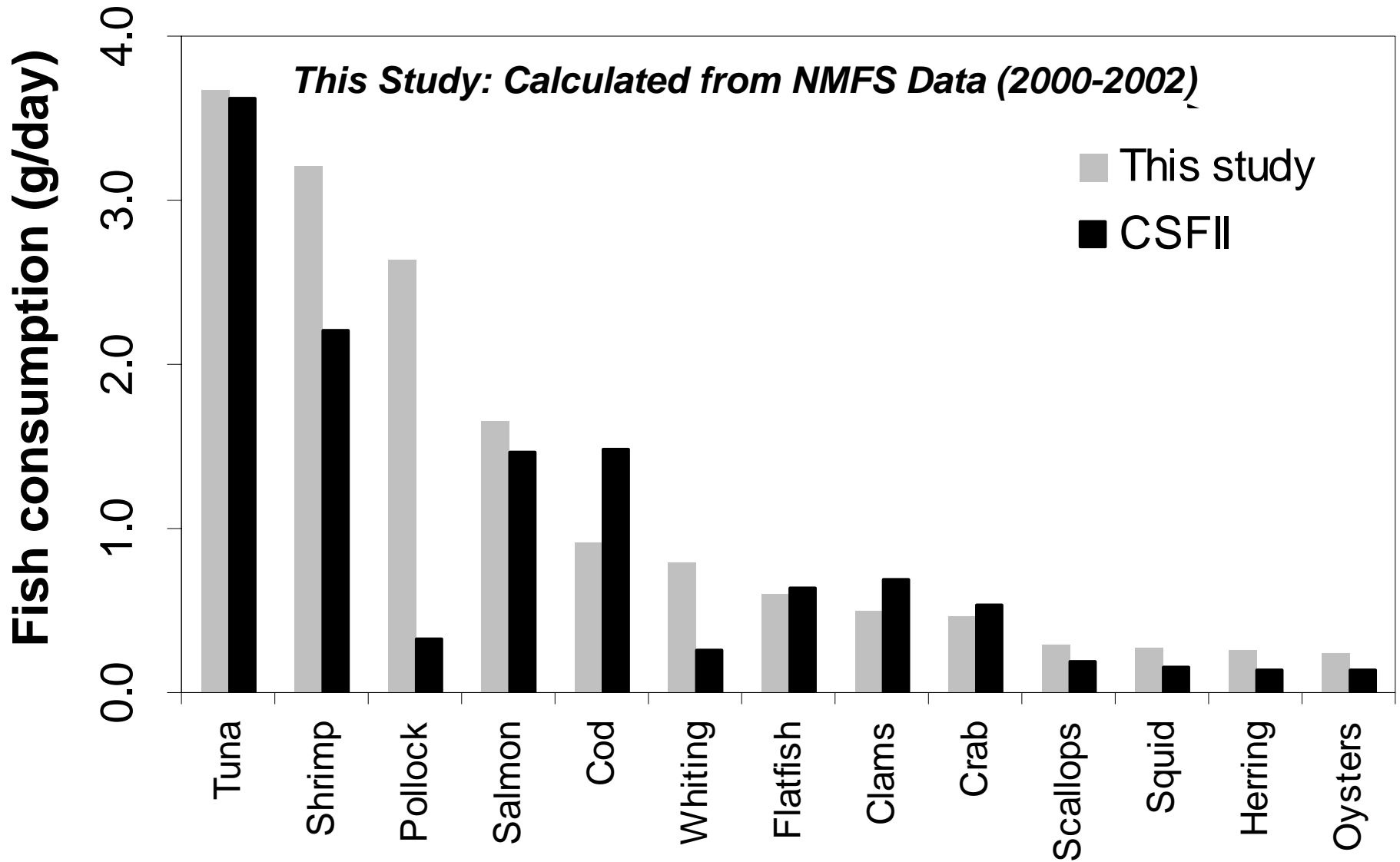


FDA Reported National Hg Values



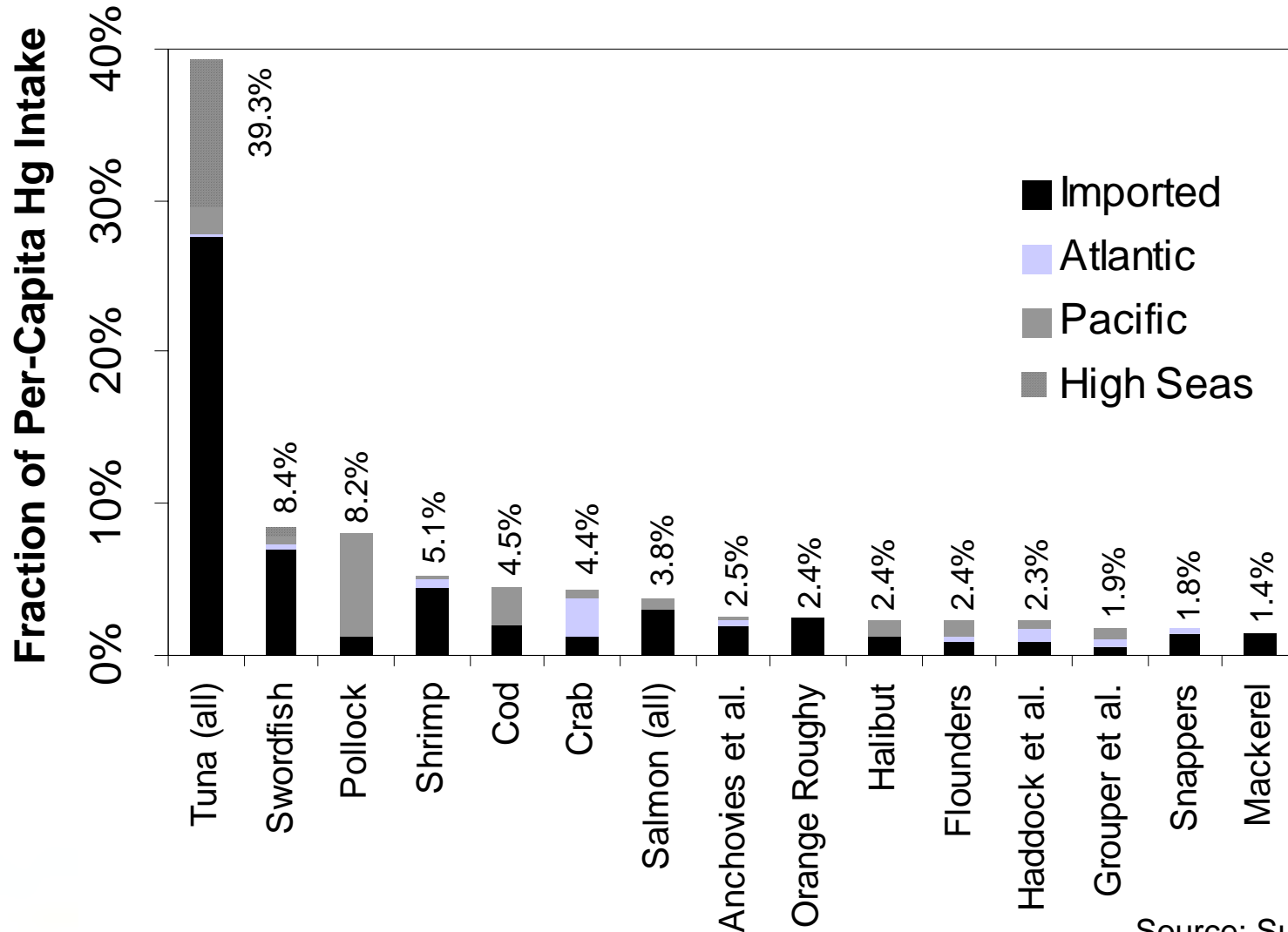
Source: FDA, 2007

U.S. Per-Capita Consumption



Source: Sunderland, 2007

Population Level Hg Exposure



Source: Sunderland, 2007

