

Linking Sediment Exposure with Effects: Modeling Techniques. Organic Availability and Uptake. Danny Reible, Hazardous Substance Research Center/South and Southwest, Louisiana State University

The release or degradation of organic contaminants in soils and sediments often shows a period of relatively rapid change followed by a period of slow or no change due to limited desorption rates or extent. This desorption-resistance has been attributed to sequestration of the contaminants in the soil or sediment matrix. Studies have suggested that this sequestration may be associated with the nature of the sorbing media or due to conformational or other changes of the contaminants in the media. Regardless of the cause, however, desorption-resistance may influence the extent or rate of uptake of contaminants into receptor organisms.

Current research assessing uptake of desorption-resistant organic contaminants by plants and animals is reviewed. The presentation will focus on the availability of these contaminants to benthic worms. Deposit-feeding benthic worms represent an intense sediment processing environment that can contribute significantly to the transport of contaminants from sediments to the overlying water and the food chain. The results of microbial and plant biological challenges of the desorption resistant contaminants will also be summarized. The research to-date suggests that desorption-resistance may reduce but not eliminate contaminant uptake and accumulation.