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Hydrodynamic and sediment transport models have been widely used in the engineering community to understand deposition and scour in rivers. Donnell et al. (1991) used a 2D model (TABS-2) to study sand bar development and delta front deposition. That the average total sediment flux was 104 million tons per year. The fine sediment passing through Simmesport accounted for 77 percent of the total load, while coarse sediment was 23 percent. sediment modeling Chesapeake Bay. 23 nitrogen. 24 phosphorus. 403 Fig. 2. Generic schematic diagram of the Sediment Flux Model (SFM), including state in Table 1). These reactions are modeled to be dependent on the. 404 405. variables, transport and biogeochemical processes, and boundary conditions. Sediment Diagenesis WASP includes a model of sediment diagenesis, based on Di Toro (2001). The model receives fluxes of particulate organic matter (C, N and P) from the water column, separated into different G classes representing reactivity. The model then predicts sediment oxygen demands, releases of DIN and DIP from sediments along with methane and sulfides. Figure 2. Structure of WASP sediment diagenesis model. Macroalgae Model Algorithms. Forms simulated.