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Thurston (in prep). Modeling Fine-grained Fluxes for Estimating Sediment Yields and Understanding Hydroclimatic and Geomorphic Processes at Lake Peters, Brooks Range, Arctic Alaska, Unpublished MS Thesis. Northern Arizona University, Flagstaff; 89 pp.

Wilderness Act. 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. Presents mathematical models for estimating and predicting sediment fluxes. \* Models provide sufficient detail and data to enable scientists in the field to reproduce the computations and use the models for understanding their own data. \* Provides computations directly applicable to developing modern water quality models. \* All models have been calibrated and verified using three large data sets. A sediment model has been developed to simulate the Sediment Oxygen Demand (SOD) and sediment nutrient fluxes after a sudden input of Particulate Organic Matter (POM). Compared with previous sediment models, the main advances are the use of a continuous function to represent the kinetics of POM diagenesis and inclusion of the biomass content in POM diagenesis. Laboratory experiments were also carried out to investigate the SOD dynamics and sediment nutrient fluxes after an input of fish food pellets into the sediment. 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.