

ABSTRACT

Westley, R.E. et al. Evaluation of Effects of Channel Maintenance Dredging and Disposal on the Marine Environment in Southern Puget Sound, Washington. Dec 1973, Department of Fisheries, State of Washington, Olympia, Washington. Washington. Dec 1973

The effects of a pipeline dredge and a clamshell dredge operating in Olympia Harbor were studied. Spoil from the clamshell operation was disposed in two locations to study the effect of spoil on differing marine environments. The study was complicated by major unforeseen toxicity due to phytoplankton which interfered with bioassays and difficulties associated with discharge of sewage into Olympia Harbor. The major findings were as follows. Pipeline Dredging: Bioassays revealed no additional toxicity attributable to pipeline operation, and no inhibiting effect on phytoplankton. Silt in water was widespread, resulting in much spoil settling outside designated disposal area. No major change was noted in macrobenthos. Operation caused minor decrease in oxygen and minor increase in "biochemical oxygen demand". Barge Disposal in Budd Inlet: No additional toxicity or phytoplankton inhibition was noted. Material primarily went to bottom with limited silt dispersal and was largely confined to disposal zone. Benthic organisms decreased in abundance but were not eradicated. Water quality was not significantly affected. Barge Dumping in Dana Passage: Material fell to bottom with little silt dispersal and spread laterally in water strata near bottom. Deposited material eroded at current velocities exceeding 26 cm/sec. Initially, depth of burial determined the presence or absence of geoducks, but observations after 5 months revealed geoducks in entire disposal area. Water quality was not significantly affected, and no additional toxicity was observed.