

SUBTIDAL STUDY NUMBER 1A

Study Title: Petroleum Hydrocarbon-Induced Injury to Subtidal

Marin

Lead Agency: NOAA

Cooperating Agency: ADEC

PROJECT JUSTIFICATION

The primary goal of Subtidal Study Number 1 is to determine the spatial and temporal distribution of oil in subtidal sediments in Prince William Sound and the Northeastern Gulf of Alaska. As of June 1990, subtidal sediments were contaminated by oil at no fewer than 15 sites within the Prince William Sound. Hydrocarbons had contaminated sediments to a depth of 20 m at least at 8 sites. In or near two heavily contaminated bays, petroleum hydrocarbons were detected in sediments at a depth of 100 m. There is also evidence suggesting a trend for petroleum hydrocarbons to move from the intertidal region to greater depths (3, 6, and 20 m) between May and November 1989 at Sleepy Bay. At Northwest Bay and Herring Bay there appeared to be a tendency toward an increase in contamination of the 6 and 20 m depths between July 1989 and June 1990. At least 7 sites along the Kenai and Alaska Peninsulas showed contamination of subtidal sediments by hydrocarbons. Petroleum hydrocarbons were detected below a depth of 6 m at three of those sites.

These results are based on a small number of samples because of delays associated with hydrocarbon analysis. In early fall of 1991, the results of the hydrocarbon analysis of 894 of the 1820 samples submitted to date were received. These data are currently undergoing the final stages of quality control. Analysis of the data from all these samples should provide a reasonably complete picture of contamination by the oil spill of subtidal sediments in Prince William Sound. A less complete summary will be available for the Gulf of Alaska. This proposal supports analysis of the data on these samples and write-up of the results of that analysis.

This study supports other studies requiring documentation of hydrocarbon contamination of subtidal sediments such as those studies of impacts on benthic communities as well as specific fish and invertebrate species. Results of the University of Alaska Fairbanks study on the responses of hydrocarbon degrading bacteria in subtidal sediments appear to be consistent with hydrocarbon results indicating contamination to a depth of 100 m at a minimum of two sites in Prince William Sound. Both the deep benthos (ST

2B) and the microbiological components of ST 1B are dependent on the results of the sediment hydrocarbon analyses.

	BUDGET (\$K)
Salaries	\$ 68.6
Travel	3.8
Contracts	13.5
Supplies	2.6
Equipment	3.8
Subtotal	<u>\$ 92.3</u>
General Administration	11.2
Total	<u>\$ 103.5</u>