

SUBTIDAL STUDY NUMBER 2B

Study Title:Deep Water Benthos

Lead Agency:ADF&G

PROJECT JUSTIFICATION

Part I

A peer review of the Status Report for this project suggests that the biological data be reanalyzed to sort out sedimentological effects and to relate biotic parameters to petroleum contaminants in sediments. The objective of this work is to complete sediment analyses for all stations examined and to analyze the data to relate the biological results to sediment parameters as suggested by the peer review.

OBJECTIVES

- 1.To reanalyze the deep benthic data to assess the relationship - or lack of relationship - of benthic faunal distributions to sedimentological parameters between the oiled and unoiled sites.
- 2.To assess the deep benthic data in relationship to petroleum contaminants in the sediments at the study sites, contingent upon receipt of hydrocarbon data from NOAA.

It is anticipated that at least six to seven weeks will be needed to obtain sediment data for the 1990 samples. This work entails sediment analysis of 14 stations x 3 depths = 42 sediment samples. A short report assessing the results of the expanded analyses will be submitted no later than June 30.

Part II

Assuming that reanalysis of the deep benthic biological data relative to sediment parameters at the study sites reinforces the conclusions in Feder (1991), the deep benthic study will be continued until all samples have been examined and a Final Report can be written. The fourteen study sites chosen on the NOAA ship in July 1990 were selected at random with 7 oiled and 7 unoiled sites chosen.

It is the intent of this damage assessment final report to compare all of the 1990 and 1991 deep benthic biological and associated

sediment data from oiled and unoiled bays in Prince William Sound. The composition of the marine benthic fauna has been successfully used at various locations throughout the industrial world as a basis for measuring effects of pollutants on the bottom, inclusive of oil that has settled after oil spills. Assessment of the benthic fauna within Prince William Sound should prove useful for assessing biological effects of the Exxon Valdez oil spill in the Sound. Preliminary examination of benthic biological data from the 14 sites, three depths at a site, suggests that oil on the bottom in bays subjected to impact from the Exxon Valdez oil spill may have affected the faunal composition. Verification of this suggestion is contingent upon analysis of sediment differences between sites and petroleum hydrocarbon composition on the bottom at the sites. The former analysis is to be completed no later than May 30, 1992.

OBJECTIVES

1. Completion of the taxonomic determinations of benthic samples from stations at 100 m and >100 m collected in July 1991.
2. Sediment analysis, inclusive of organic carbon and nitrogen determinations as well as carbon isotopic determinations, for the sediment samples collected in July 1991.
3. Completion of statistical and other analyses of the 1990-91 biological data.
4. Completion of all multivariate analyses involving sediment and hydrocarbon parameters (if the latter data are available).
5. Completion of a Final Damage Assessment Report no later than November 30, 1992. This report will represent a compilation of 1990 and 1991 deep benthic data and will examine the data for possible effects resulting from the Exxon Valdez oil spill.

BUDGET (\$K)
(Part I)

Salaries	\$ 0.0
Travel	0.0
Contractual	10.0
Supplies	0.0
Equipment	0.0
Indirect Costs	<u>0.0</u>
Subtotal	\$ 10.0
General Administration	<u>0.7</u>
Total	\$ 10.7

BUDGET (\$K)
(Part II)

Salaries	\$ 1.8
Travel	0.0
Contractual	70.0
Supplies	0.0
Equipment	0.0
Indirect Cost	<u>0.0</u>
Subtotal	\$ 71.8
General Administration	<u>5.1</u>
Total	\$ 76.9