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APPLICATION OF REMOTE SENSING
FOR FISHERY RESOURCE
ASSESSMENT AND MONITORING

SKYLAB EXPERIMENT NO. 240

CONTRACT NO. T-8217B

MONTHLY PROGRESS REPORT NO. 9

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APPLICATION OF REMOTE SENSING
FOR FISHERY RESOURCE
ASSESSMENT AND MONITORING

INTRODUCTION

This is the ninth of a monthly series of progress reports required by the Statement of Work for Project 240 entitled "Application of Remote Sensing for Oceanic Gamefish Assessment and Monitoring", under Contract No. T-8217B.

OVERALL STATUS

The post mission analytical phase is in progress.

RESULTS

Preliminary results utilizing data from August 4 operations indicate that sea truth oceanographic parameters correlate significantly with white marlin and sailfish as follows:

Species	- White Marlin	Sailfish
Parameters	- Sea Surface Temperature	Sea Surface Temperature
	Sea State	Sea State
	Distance From Shore	Distance From Shore
	Chlorophyll a, c	Chlorophyll a, b, c
	Depth	Air Temperature

In these preliminary correlations a best sample set was utilized in which data was eliminated that caused error in the dependent variable. The eliminated data had been obtained in areas of low fishing pressure.

All rips visible in photography from the light aircraft and from the NC130B have been plotted on a navigation chart to allow correlation with fishing data.

There were no gross changes in water color that were visible in the aerial photography. However, the quality of some of the photography precluded its use in this phase of analysis. Changes in color were detected by the spectrometer, but were apparently so gradual that examination of the photography did not reveal their presence.

Preliminary analysis of the spectrometer data has resulted in the following:

- Correlation with surface chlorophyll measurements.
- Remotely sensed chlorophyll measurements along ground track of light aircraft.
- Correlation with surface-acquired turbidity measurements.
- Remotely sensed turbidity measurement along ground track of light aircraft.

Examination of the S192 screening imagery and the S190A photography indicates that there are areas of reduced sea state within the test site. This is inferred from the anomalous dark patches visible within sun-glint patterns. It will be very difficult to use the Skylab imagery and photography for any other purpose because of extensive coverage of the test area by broken clouds (about 60% coverage).

EXPECTED ACCOMPLISHMENTS

A predictive model will be developed for white marlin utilizing sea truth oceanographic data as the independent variable.

Verification of statistical validity of remote chlorophyll and remote turbidity measurements will be attempted using an existing model. Another new model for remote sensing of chlorophyll and turbidity will also be

evaluated; if predictive accuracy is found to be improved, a map showing the remotely determined values of these parameters according to the new model will be produced.

Additional accomplishments will be the completion of software to handle S191 data; completion of time-history plots of selected S191 data; and the preparation of punch cards for MSS and S191 data on a fishing unit area basis.

SUMMARY OUTLOOK

Availability of the S192 tape is still understood to be scheduled for June despite a sizable reduction in the data volume requested by the project. Also, in order to speed delivery, the project has indicated willingness to use the edited raw data stream rather than wait for the final product. A June delivery is too late to possibly complete analysis within the current contract period.