STUDY OF THE UTILIZATION OF EREP DATA FROM THE WABASH RIVER BASIN

Project #SR397

Contract #NAS 9-13301

Skylab/EREP Monthly Report for May 1975

Principal Investigations Management Office

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Activities during the subject reporting period were concerned with the analysis of the SL/4 S190A digitized color IR photography.

(A) Overall Status

The major analysis work on the digitized SL/4 S190A color IR photography was completed.

The proposal for extension of work through September 1975 was completed and submitted.

The presentation for the paper "Machine Aided Multispectral Analysis Utilizing Skylab Thermal Data for Land-Use Mapping" was prepared for the Purdue Symposium on Machine Processing of Remotely Sensed Data.

The SL/2 S192 data set which includes the reprocessed band 8 was reviewed. The data is better then band 8 in the previous filtered S192 data sets; there are no subframe drop outs. However, the scale of the reprocessed band 8 is different than that of the previous SL/2 S192 filtered data sets. At this time, we feel that the time and resourses needed to overlay the good band 8 with the previous data set would not be worth the results obtained. That time could be spent to better use for other phases of the Skylab contract.

(B) Scientific Recommendations

No recommendations are being made this period.

(C) Expected Accomplishments

Analysis of the SL/2 S191 data will continue and work will begin to prepare the final report.

(D) Significant Results

Analysis of the digitized SL/4 S190A color IR photography proved very difficult. An area within Allen County, including Ft. Wayne, was the study area. Eight segments of the study area were clustered separately and the cluster maps were then compared with the photography and maps available. The training

areas for the land-use classes were selected from the cluster maps. The separability measures (transformed divergence) of the classes indicated, however, that many of the land-use classes weren't spectrally separable. The classification results bore this out. Visually the resulting classification map was poor. The classification performance for those points which were used for training (training performance) was 67% correct.

These results were of significantly lower quality than those obtained for the summertime SL/2 data near Lake Monroe, Indiana, reported previously.[1] We feel that the low contrast between land-use classes during the wintertime and the limited spectral range and resolution are the major causes for the poor performance.

(E) Travel Summary

No travel occurred during this month and none is planned for next month.

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1. Biehl, L.L. and Silva, L.F.,"A Multilevel, Multispectral Data Set Analysis on the Visible and Infrared Wavelength Regions," Proc. of the IEEE. Vol 63, no. 1. pp. 165-167, January 1975.

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