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CR-136288

EREP MONTHLY PROGRESS REPORT - NUMBER 7

Period: October 16, 1973, to November 15, 1973

INVENTORY OF FOREST AND RANGELAND RESOURCES, INCLUDING FOREST STRESS

Registration No. 418

Contract No. T4106B

E74-10161) INVENTORY OF FOREST AND  
RANGELAND RESOURCES, INCLUDING FOREST  
STRESS Monthly Progress Report, 16 Oct  
- 15-Nov (Pacific Southwest Forest and  
Range Experiment) 4 p HC \$3 00 - CSCL 02F

N74-14029

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G3/13 00161

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Report Written: November 27, 1973

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A. Overall Status

1. Atlanta, Georgia - forest inventory site (512)

No SL-2 or SL-3 overflights have been accomplished over this site. We are making preparations to man this site and use the silicon vidicon airborne system as soon as we can determine the expected dates of SL-4 overpasses.

2. Black Hills, South Dakota - forest stress site (312)

All of the requested photographic products from SL-2 have now been received, with the final shipment of 9 1/2-inch color enlarged transparencies from the earth terrain mapping camera (S-190B) arriving during mid-November.

A photographic image analysis plan has been formulated based on the coverage received over the Black Hills on June 9, 1973. This plan includes the creation of color composites (in negative form) from the S-190A imagery. The color negatives will in turn be enlarged for human photo interpretation. Preanalysis viewing of all photographic imagery indicates some of the proposal objectives can be attained even though the imagery was obtained at a poor time of year. Had SL-3 performed as planned during September, we believe the proposal objectives would have been achieved with great success.

Our requirements for processing 24-channel scanner data (Mission 247) were submitted to the Data Management Section. Although we will not receive some of the products requested, subsequent negotiations provided a satisfactory solution for our needs. Based on our negotiations, we will actually receive one copy of each of the channels imaged (for three flight

lines) on 9 1/2-inch black-and-white transparency film. A separate copy of the same imagery in negative form would have been helpful. In addition, the Data Management Section has agreed to provide two 3-color enhancements of the MSS data. This will be undertaken as a one-time joint study so as to utilize some of the quantitative target radiance data we collected at the time of the C-130 flight on September 17, 1973.

### 3. Manitou, Colorado - range inventory site (313)

All aircraft support data, Missions 238, 239, and 248, have been received and indexed. Photographic imagery from Missions 239 and 248 (RB-57) representing selected subsets of detailed analysis and interpretation have been chosen and preliminary interpretations made.

No SL-3 data, the data-take pass August 4, 1973, has been received.

Preliminary linear regression models have been developed to relate ground-measured plant community parameters, i.e., percent live foliage cover, percent bare ground, and percent plant litter, to those same parameters measured photogrammetrically in large-scale (1:600) color and color infrared aerial photographs. Correlation coefficients using the color infrared photographs are higher than those derived using the color photographs. We need to increase measurement precision on the photographs to improve the correlation coefficients before a sampling model for smaller scale photographs and the Skylab photographs is developed.

## B. Recommendations Concerning Decisions Required to Ensure Attainment of Experiment's Scientific Objectives

### 1. Black Hills, South Dakota - forest stress site (312)

We are still waiting word from the PIMO on the status of the SL-2, S-192 MSS tapes. We would like to receive the MSS tapes as soon as possible so that we may begin processing the data through our subcontract with the University of Kansas. Further delays beyond January 1 will necessitate subcontract amendments and also will likely result in a request for a time extension on our contract expiration date.

### 2. Manitou, Colorado - range inventory site (313)

Until we have opportunity to examine and compare SL-3 data with SL-2 data, and until we have definite knowledge of the kinds and quality of SL-3 data, we have no specific recommendations for the Skylab range inventory experiment.

C. **Expected Accomplishments**

**Manitou, Colorado - range inventory site (313)**

We should be able to make preliminary statements regarding plant community classification by stereoscopic interpretation of SL-2 photographic products compared to the same kind of interpretation using the support aircraft data from Mission 239. If SL-3 products are received, we will make preliminary statements on temporal changes in plant communities interpretable using SL-2 and SL-3 products.

D. **Significant Results, Practical Applications, and Operational Problems.**

All sites - none at present.

E. **Summary Outlook**

All sites - no changes in our statement of work at present.

F. **Travel Plans - November 16 to December 15, 1973**

**I. Manitou, Colorado - range inventory site (313)**

Driscoll plans to go to Berkeley, CA, during the period 11/26-11/30/73 to do work on the I<sup>2</sup>S system using the black-and-white SL-2 S-190A products and to do enlargements of the color and color infrared SL-2 S-190A products.