

PHENOLOGY SATELLITE EXPERIMENT
ERTS-A Proposal No. MMC 159

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Progress Report for Period 2/8/73 - 4/8/73

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Data flow from NASA has improved, but there are still some delays in receiving the data.

Accomplishments during this reporting period include:

A. Ground observations photography continued at all sites. Sites photographed include (1) forest, (2) rangeland, (3) winter wheat, and (4) corn fields.

B. Photographic analysis of last fall's imagery for the eastern region was completed.

C. Spectral time lapse analysis has been done for the fall data for 7 test sites in the Appalachian and Mississippi Corridors.

In comparing the new spectral response for most of the dates for any given test site, a negligible shift occurs in the visible bands except where there appears to be considerable haze over the test site. The infrared channels generally indicate a decrease in the relative spectral response of the cover type as the Brown Wave progresses.

However, when corrective factors for solar elevation and atmospheric conditions were applied to the raw data for the three Lafayette dates, the responses in the visible channels suddenly showed an increase in response as the plants senesced. While the factors shifted the infrared data as well in this direction, the shift did not change the raw data significantly.

It has also been found helpful in analyzing the data and locating test sites to produce by means of the digital display, simulated color infrared photographs for certain dates for each test site. These are made by using a sequence of different color filters for each of the first three channels of data.

D. The first few ERTS-1 cycles of MSS data have been received for the ten sites in the Rocky Mountain and Columbia River Corridors.

Three subsites have been identified within each of the ten test sites. These are (1) rangeland, (2) alfalfa fields, and (3) wheat fields. The task of accurately identifying each of the three subsites is extremely tedious and final designation is still pending on some subsites.

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EXPERIMENT Progress Report, 8 Feb. - 8
Apr. 1973 (Cornell Univ.) 2 p HC \$3.00

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Publications and Papers:

Dethier, B. E., M. D. Ashley, B. Blair and R. J. Hopp. "Phenology Satellite Experiment". Paper presented at the Symposium on Significant Results Obtained from ERTS-1, Greenbelt, MD, March 5-9, 1973.

Ashley, M. D., J. Rea and B. E. Dethier. "Mapping Phenological Change Using ERTS-1 Imagery". Proceedings of the Second Annual Remote Sensing of Earth Resources Conference, Tullahoma, TN, March 26-28, 1973.