DEPARTMENT OF THE ARMY
CONSTRUCTION ENGINEERING RESEARCH LABORATORY
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CERL-SPE



22 August 1973

L. B. Johnson Manned Spacecraft Center
Experimental Development & Integration Branch
Attn: Roger D. Hicks, Code TF6
Houston, Texas 77058

Dear Mr. Hicks:

Inclosed is the first progress report on our Skylab project entitled "Environmental and Ecological Impact of Major Construction". This is EREP Investigation No. 341.

Skylab data will be used in our overall program of characterization of the pre-construction environment of a proposed impoundment. Since our analysis team had no clear expectation of the quality of the imagery, we find we may now utilize it to a greater extent than we had planned. Please feel free to visit us and see our study site if you wish, but results based solely on Skylab imagery are not contemplated for some months.

Sincerely yours,

Ravinder K. Jain

RAVINDER K. JAIN
Principal Investigator
Chief, Environmental Systems Branch

1 Incl
As stated



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PROGRESS REPORT NO. 1

20 August 1973

PROJECT TITLE: Environmental and Ecological Impact of Major Construction

SUGGESTED KEY WORDS: Reservoir Environment

PROGRESS TO DATE:

Ground truth was successfully collected as part of an ongoing program for the EREP pass of 10 June 1973. Data on temperatures, stream levels, wind movement and insolation are recorded continuously on the study area. Special collection of water quality data were made at the exact time of overflight by a special team controlled by this office. Collection was also made of water quality parameters on the Shelbyville Reservoir, an existing impoundment within the EREP pass area but outside our designated study area, through a cooperating study team from the Illinois State Natural History Survey. This data is being analyzed at this time.

The products of the EREP S190a system were received on 6 August 1973. The initial product from the S190b Earth Terrain Camera was received 10 August 1973. Preliminary visual examination of the transparencies indicates that they are of generally excellent quality. Linear roadways less than 10 meters in width are clearly defined, and small outbuildings less than 10 meters square may be inferred by tonal changes on the 4.5" color images.

Upon seeing the quality of the 4.5" S190b images, the analysis team altered their plans slightly, and now wish to utilize these frames for constructing a basic, metric plan of the study area. They also have some hope of obtaining some previously unmapped terrain irregularities from the visual, stereoscopic examination of these frames.

It is expected that comparison will be made of the spectral response of vegetation and water in our study area on the 190a film material and the response of the same areas as recorded on ERTS imagery for roughly corresponding periods. The enlarged EREP frames will be digitized and stored in a matrix compatible with the digitized ERTS coverage. Significant differences in response in bands of similar expected reflectance will be studied by a ground truth team, as this could affect our overall plan of establishment of relatively stable pre-construction parameters.

There are no present significant results beyond the newly formulated plan to utilize the 190b coverage for metric purposes. This was due to its superior resolution. If the orbit had been nominal at this time, the satellite would not have passed so exactly over the center of our study area. For our purposes, the off-track EREP pass on Track 33 was far superior to the planned track.

Progress Report No. 2 is expected approximately 20 November 1973.