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STIP

E7.5-10407
CR-143400 II

Type II PROGRESS REPORT

6/12/75

EVALUATION OF LANDSAT-2 DATA
FOR
SELECTED HYDROLOGIC APPLICATIONS

"Made available under NASA sponsorship
in the interest of early and wide dis-
semination of Earth Resources Survey
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(E75-10407) EVALUATION OF LANDSAT-2 DATA
FOR SELECTED HYDROLOGIC APPLICATIONS
Progress Report (National Oceanic and
Atmospheric Administration) 3 p HC \$3.25
N75-33462
Unclas
CSCL 08H G3/43 00407

Landsat-2 Investigation No. 23170

Contract No. NAS-53991A

23170

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SEP 09 1975

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A. Problems

At this early stage, our problems are simply a lack of data. We anticipate delays relating to the new procedures of acquiring data, but our studies are research oriented so that timeliness is not critical.

B. Accomplishments

1) An aircraft gamma-ray overflight to determine soil moisture was completed over the Laverne, Minn., NOAA Test site on 12 May 1975. Ground truth was collected simultaneously by NOAA personnel and by Soil Conservation Service employees. Original target date was 11 May but rain showers aborted the mission. It is believed that the test site is in the area of overlap of the Landsat-2 image. The Landsat-2 MSS imagery has not been received at this reporting.

Soil moisture values were obtained at 81 sites by gravimetric analysis performed by the Twin City Testing and Engineering Laboratory, Minneapolis.

The results of the gamma-ray survey have not yet been received from EG&G (Las Vegas), the company who flew the survey with their ARMS system.

Using a Gamma 3000 spectral radiometer four stations were occupied; five spectra were collected at each station.

2) The NASA P-3 overflew the Cranberry Lake, N.Y., site on 9 April. Snow was on the ground. Ground data were routinely collected on snow. Additional photography by light aircraft at low levels has been collected over the site to determine the distribution and type of forest cover. Aircraft data are reported to be of good quality but no data have as yet been received as of this date.

3) On March 18, 1975 EG&G flew a gamma-ray survey over a NOAA test site in Phoenix, Arizona, in conjunction with a NASA microwave overflight

for Dr. Tom Schmugge. Ground truth (soil moisture) was collected concurrently. Dr. McGinnis of NOAA/NESS was on site.

C. Significant Results

No significant results have been achieved this period.

D. Publications

None.

E. Recommendations

None.

F. Funds Expended

\$20.5K has been expended. Of this amount, \$12K went for the EG&G gamma-ray survey of the Luverne, Minn., test site and the Phoenix Test Site.

G. Data use

None.

H. Aircraft Data

Data were collected over Cranberry Lake, N.Y., for snow studies on April 1975 by the NASA P-3 aircraft. Will Fenner was NASA project manager for the flight. AMPS, PRT-5, and Color IR (Zeiss) photos were collected.

On 7 April 1975, the NASA U-2 aircraft flew the Cranberry Lake site. Vinten multispectral images were collected.