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Type I Progress Report for the Period 14 February to 14 April 1974 for ERTS-1 Data User Investigation of the Use of ERTS Imagery in Reservoir Management and Operation - Proposal Number MMC 89

Mr. Saul Cooper - DE 002
Dr. Paul Bock - UN 017
- Co-Principal Investigators

The eleventh 2-month period of our participation in the ERTS-1 program has been featured by:

a. Continued collection and entry of all DCS data into our computer, and continued analysis of this data to provide system reliability and data availability statistics.

b. Continued work on the analysis of the results from our Corps-wide questionnaire relating to the present status of and future needs for automated data collection facilities. A complete discussion will be available in our final study report (the tabulated statistics may be found in Appendix A of our January 1974, Type II Report).

c. Continued analysis of pertinent data and ERTS imagery from the late June to early July 1973 New England flood (see July 1973, Type II Report for further details) to support our study of the potential usefulness of satellite imagery and data collection for NED water related purposes both during and after a significant flood event.

d. Progress toward preparation of a snowmelt analysis report (see January 1974, Type II Report for further details) which will be included in our final study report.

e. Continued progress in the development of a man/computer interactive system for ERTS image processing.

f. Progress toward preparation of our final study report detailing all our activities in the development of methods for analyzing ERTS imagery products to aid Corps watershed management functions.

(E74-10542) ERTS-1 DATA USER INVESTIGATION OF THE USE OF ERTS IMAGERY IN RESERVOIR MANAGEMENT AND OPERATION Progress Report, 14 (Corps of Engineers, Waltham, Mass.) 4 p HC $4.00 CSCL 08H
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A listing of the locations of our operating DCP's is inclosed. Please note the change from the list submitted with our last report. DCS data relay from NASA via our real time teletype link continues on a timely basis. Punched cards and computer printouts of our data also arrive by mail in a timely manner. The ERTS-1 DCS hardware is still performing well. We are continuing to record and analyze DCP, sensor and battery performance and reliability. A complete summary of our statistics will be presented in the final report.

On 15 February 1974, the U.S. Army Cold Regions Research and Engineering Laboratory (CRREL) installed a Martek Instrument Co., Inc. Mark III Water Quality Monitoring System with one of their DCP's at Libby Dam on the Kootenai River, Libby, Montana. On 6 April, an air temperature sensor and a rain gage were added as additional sensors to the DCP's output. The acquired information is being monitored and analyzed at CRREL. Significant results will be summarized in our final report. Beginning 1 April 1974, we began relaying information from our DCP's on the Saint John River in Maine on a daily basis to those responsible for forecasting floodflows on that river. This resulted from an agreement between officials from Canada and the United States that included the establishment of the DCP at Nine Mile bridge. The latter is a key index station for flood forecasts on the Saint John and one that has never before been accessible for real time data relay.

Negotiations are continuing between Corps of Engineers Headquarters and NASA concerning cost allocations related to the establishment of a demonstration direct downlink at the New England Division for collection of ERTS data. We are also following closely developments regarding the GOES Data Collection System.

On 26 February 1974, a major coordination meeting, involving NED and CRREL took place at Waltham, Massachusetts. Several meetings have also been held with the University of Connecticut to outline their input for our final report.

We continue to be in contact with other ERTS investigators, especially personnel from NASA, U.S. Department of the Interior, and the National Oceanic and Atmospheric Administration. During the reporting period, Mr. Cooper attended a meeting with Ball Brothers, Inc. of Boulder, Colorado at which an inspection was made of equipment developed for the U.S. Geological Survey: a

DCP Memory Board to permit increased amounts of data to be transmitted via ERTS DCS, as well as an ERTS/GOES convertible data collection platform. Also, during the reporting period we had discussions with COMSAT General Corporation concerning the possible interest of COMSAT in supplying a commercial operational satellite (or satellites) for data relay. On 10 April, our ERTS Data Collection System was demonstrated for a representative of the Corps North Atlantic Division to assist them in determining the best procedure for satisfying their own automated data collection needs.

In letter of 5 March 1974, the New England Division requested that NASA continue sending ERTS-1 DCS data as long as the satellite is operational. An extension for acquisition of ERTS imagery for as long as possible in anticipation of acceptance of our ERTS-B proposed investigation was also requested.

Our ERTS-1 imagery standing order has been changed from two copies of all material we have been receiving to one copy each and the part of our order regarding 70 mm. transparencies has been changed from 70 mm. negatives to 70 mm. positives. We requested on 19 February and received from NASA during the reporting period, seven ERTS imagery scenes on magnetic tapes.

Saul Cooper

SAUL COOPER
Principal Investigator

1 Incl
As stated

ERTS-1 - DCP INFORMATION SHEET

ARMY CORPS OF ENGINEERS, NEW ENGLAND DIVISION 14 April 1974

ID NO.	DCP NO.	TYPE*	STATION NAME	LAT	LONG	IN-STALLED
1	6254	S	ST. JOHN RIVER AT FORT KENT, MAINE	47 15	68 35	091972
8	6220	S	ST. JOHN RIVER AT NINEMILE BR., MAINE	46 42	69 43	073073
2	6355	S	PENOBSCOT RIVER AT WEST ENFIELD, MAINE	45 14	68 39	092072
3	6271	S	CARABASSETT RIVER AT NORTH ANSON, MAINE	44 52	69 57	100472
5	6171	S	SACO RIVER AT CORNISH, MAINE	43 48	70 47	112872
6	6273	S	PEMIGEWASSET RIVER AT PLYMOUTH, N.H.	43 45	71 41	112272
7	6335	S	MERRIMACK RIVER AT GOFFS FALLS, N.H.	42 57	71 28	032773
9	6304	S	CHARLES R. AT CHARLES R. VILLAGE, MASS.	42 15	71 15	071772
10	6207	S	TOWN BROOK AT QUINCY, MASS.	42 15	71 00	090872
41	6142	S	NORTH NASHUA RIVER AT FITCHBURG, MASS.	42 34	71 47	110672
11	6010	S	PAWTUXET RIVER AT CRANSTON, R.I.	41 45	71 27	083072
13	6106	S	BRANCH RIVER AT FORESTDALE, R.I.	42 00	71 34	100173
12	6127	S	CONNECTICUT RIVER AT HARTFORD, CONN.	41 46	72 40	083072
20	6021	P	STINSON MOUNTAIN, N.H.	43 50	71 47	032273
21	6345	P	SOUTH MOUNTAIN, N.H.	42 59	71 35	120672
22	6206	P	FRANKLIN FALLS DAM, N.H.	43 28	71 40	051773
23	6201	P	BLACKWATER DAM, N.H.	43 19	71 44	100273
24	6012	P	MACDOWELL DAM, N.H.	42 54	71 59	042473
26	6071	P	WACHUSETT MOUNTAIN, MASS.	42 29	71 53	100473
25		P	MANSFIELD HOLLOW DAM, CONNECTICUT	41 46	72 11	
30	6101	C	STAMFORD BARRIER, STAMFORD, CONNECTICUT	41 02	73 32	011073
42	6272	Q	WESTFIELD R. AT WEST SPRINGFIELD, MASS.	42 06	72 38	092872
43	6242	Q	CHICOPEE RIVER AT CHICOPEE, MASS.	42 09	72 35	121472
50	6147	T	NED HEADQUARTERS, WALTHAM, MASS.	42 24	71 13	071772
51	6325	T	COLD REGIONS LAB AT HANOVER, N.H.	VARIABLE		042373
52	6216	T	COLD REGIONS LAB AT HANOVER, N.H.	VARIABLE		120572
54	6063	T	U.S. GEOLOGICAL SURVEY, BOSTON, MASS.	VARIABLE		032073

*S-RIVER STAGE
P-PRECIPITATION
C-COASTAL(WIND DIRECTION,VELOCITY AND TIDE)
Q-WATER QUALITY(TEMPERATURE,CONDUCTIVITY,PH AND DISSOLVED OXYGEN)
T-TEST SET(SENSORS VARIABLE)