SECOND BI-MONTHLY PROGRESS REPORT
UNIVERSITY OF ALASKA
ERTS PROJECT 110-9
November 30, 1972

A. CIRCULATION OF PRINCE WILLIAM SOUND

B. ROBIN D. MUENCH/GSFC ID UN 614

C. PROBLEMS IMPEDING INVESTIGATION: Excessive cloud cover over study region has limited amount of useful imagery.

D. PROGRESS REPORT:

1. Accomplishments during reporting period:

ERTS-1 MSS data have been obtained for the period from launch through October 1972, as initially requested, and catalogued. Aircraft MSS and IR data from the NASA NP-3 flight of July 1972 over the study region have been obtained.

Visual inspection of these data has suggested that sediment plumes from rivers may be useful in tracing movements of surface waters. Ice plumes, as from glaciers, appear to be useful for this only in very spatially limited regions. Both the ERTS-1 and aircraft data are being further analyzed to determine whether more subtle features, such as water color, may be useful for this.

Oceanographic data from the 11-12 September cruise to obtain baseline data from the study region are in the final stages of data processing prior to analysis.

2. Plans for next reporting period:

ERTS-1 MSS data have been requested for the period from 1 November - 10 December 1972, an extension beyond the initial request. Visual examination of this and already available data will continue, and color enhancement will be utilized in an attempt to more clearly delineate river sediment plumes. IR data from the aircraft will be compared with visual MSS data in an attempt to correlate temperatures with the sediment plumes.

A cruise into the study region to obtain oceanographic baseline data will be carried out during 4-8 December 1972, coincident with an ERTS-1 overpass.

E. SIGNIFICANT RESULTS: (See separate page.)

F. PUBLICATIONS: None during reporting period.

G. RECOMMENDATIONS: None.

H. CHANGES IN STANDING ORDER FORMS: Yes (form attached).

I. ERTS IMAGE DESCRIPTORS FORMS: Yes (form attached).

J. DATA REQUEST FORMS: None

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UNIVERSITY OF ALASKA
ERTS PROJECT 110-9
November 30, 1972

PRINCIPAL INVESTIGATOR: Robin D. Muench

TITLE OF INVESTIGATION: Circulation of Prince William Sound.

DISCIPLINE: Marine resources and ocean surveys.

SUBDISCIPLINE: Surveys of current and ocean dynamics; estuary dynamics.

SUMMARY OF SIGNIFICANT RESULTS:

During the second reporting period, visual examination of the available ERTS-1 and NASA NP-3 aircraft imagery has suggested that sediment-laden plumes from rivers may be useful in tracking surface circulation over the regions where these plumes retain their visible identities. Plumes of ice derived from tidewater glaciers are highly visible on the ERTS-1 imagery, but are generally of too small an areal extent to be useful in tracing surface circulation. Shore-fast ice is also highly visible on the ERTS-1 data.

Practical scientific results include a corroboration of the westward flow just offshore in the Gulf of Alaska with inflow through Hinchinbrook Entrance into Prince William Sound. The tracer in this case was the Copper River plume, which originates at the mouth of the Copper River east of Prince William Sound. A single partial image of Port Valdez, in northeastern Prince William Sound, suggests by the visible suspended sediment distribution that surface circulation there was cyclonic, as deduced previously from oceanographic baseline data.

Not related to Prince William Sound circulation, but of general interest, is the high visibility on ERTS-1 imagery of surf along the shoreline of the Gulf of Alaska. It is possible to determine the direction from which the major swell is travelling.

ERTS 1 STANDING ORDER FORM

(See Instructions on Back)

-1

Change requested to be effective 11/01/72

DATE 7 November 1972

GSFC ID NUMBER U 614

PRINCIPAL INVESTIGATOR Dr. Robin D. Muench

TELEPHONE NO. (907) 479-7745 ☐ NEW

SHIP TO: Albert E. Belon (NAME)
Geophysical Institute (AGENCY)
University of Alaska (STREET)
Fairbanks, Alaska 99701 (CITY) (STATE) (ZIP)

☐ ADDITION
☒ CHANGE
☐ DELETION

CATALOGS DESIRED
STANDARD ☐ U.S. ☐ NON-U.S.
DCS ☐
MICROFILM ☐ U.S. ☐ NON-U.S.
☐ CHECK IF ADDRESS IS NEW

NDPF USE ONLY
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AREA NUMBER	GEOGRAPHIC POINTS		CLOUD COVER %	QUALITY	COVERAGE PERIOD		PROD		TICK MARK	QUANTITY	RBV BANDS			MSS BANDS				DELETE
	LATITUDE	LONGITUDE			START DATE	STOP DATE	TYPE	FORMAT			1	2	3	1	2	3	4	
FROM	61°10'N	149°00'W	80		070172	103103172		M		2	x	x	x	x	x	x	x	
	61°10'N	145°00'W			030173	083173		S		2	x	x	x	x	x	x	x	
	60°00'N	145°00'W						P		2	x	x	x	x	x	x	x	
	60°00'N	149°00'W																
TO	61°10'N	149°00'W	60	F	110172	121072		M		2	x	x	x	x	x	x	x	
	61°10'N	145°00'W			021073	083173		S		2	x	x	x	x	x	x	x	
	60°00'N	145°00'W						P		2	x	x	x	x	x	x	x	
	60°00'N	149°00'W																

GSFC 37-3 (7/72)

INVESTIGATOR'S COPY

ERTS IMAGE DESCRIPTOR FORM

(See Instructions on Back)

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D
N
ID

DATE 7 No30mNovember 1972

PRINCIPAL INVESTIGATOR U 614 U 6R: D. Muench

GSFC UN 614 Dr. Robin D. Muench

ORGANIZATION IMS, University of Alaska

PRODUCT ID (INCLUDE BAND AND PRODUCT)	FREQUENTLY USED DESCRIPTORS*			DESCRIPTORS
	Clouds	Mtns.	Glacier	
1010-20333R	x	x	x	Lakes; Rivers
1010-20334M	x	x	x	Lakes; Rivers
1026-20223M	x	x	x	Lakes; Rivers
1027-20282M	x			
1028-20333M	x	x	x	Lakes; Rivers
1029-20392M	x	x	x	Lakes; Rivers
1045-20280M	x	x	x	Rivers
1046-20341M	x	x	x	Ocean
1047-20392M	x	x	x	Lakes; Rivers
1047-20395M	x	x	x	Lakes; Rivers
1049-20505M	x	x		Rivers; Ocean
1062-20224M	x	x	x	Rivers; Lakes; Ocean
1063-20280M	x	x	x	Rivers; Ocean
1063-20282M	x	x	x	Rivers; Ocean
1064-20334M	x	x	x	Rivers; Lakes; Ocean
1064-20340M	x			Ocean
1066-20451M	x	x	x	Rivers; Lakes; Ocean
1066-20453M	x	x	x	Rivers; Lakes; Ocean
1081-20281M	x	x	x	Rivers; Lakes; Ocean
1081-20284M		x		Rivers; Ocean
1084-20453M	x	x		
1084-20455M	x	x		

*FOR DESCRIPTORS WHICH WILL OCCUR FREQUENTLY, WRITE THE DESCRIPTOR TERMS IN THESE COLUMN HEADING SPACES NOW AND USE A CHECK (✓) MARK IN THE APPROPRIATE PRODUCT ID LINES. (FOR OTHER DESCRIPTORS, WRITE THE TERM UNDER THE DESCRIPTORS COLUMN).

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BLDG 23 ROOM E413
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301-982-5406

GSFC 37-2 (7/72)