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Evaluation of ERTS Data for Certain Oceanographic Uses

BI-MONTHLY REPORT

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CERTAIN OCEANOGRAPHIC USES Bimonthly
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Reporting Period: November-December 1973
ERTS Proposal # : 106
GSFC MMC : C309

A. Work Summary During Period

*1. Lake Michigan Upwellings

Sig. Result

Upwelling along the eastern shore of Lake Michigan was occurring during the 3 and 21 August 1973 visits by ERTS-1. The NOAA-2 VHRR thermal-IR data are being digitized for comparison. Early indications are that these upwellings induced a calcium carbonate (CaCO_3) precipitate to form in the surface waters. This "whitening" reduces the light penetration considerably. It is most pronounced in the MSS-4 channel. On the lake bottom this jell-like sediment is known as "marl" and adds to the eutrophication of the lake. This phenomenon may help to explain the "varve-like" nature of bottom cores that have been observed in the Great Lakes.

A paper on this upwelling will be presented at the 9th International Remote Sensing of Environment Symposium at Ann Arbor, Michigan in April.

2. ERTS-1 Observes an Oil Slick?

Accepted for publication in Remote Sensing of Environment.

3. Circulation Atlas

Wind generated surface current stresses have been calculated for the following locations where clear to partly cloudy skies prevailed in conjunction with ERTS-1:

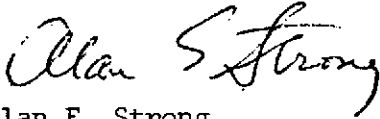
- a. S. Lake Michigan
- b. S. Lake Huron
- c. Lake St. Clair
- d. Lake Erie

e. Lake Ontario

These resultant wind stress vectors will be compared with observed currents and used to develop model circulations for various stress vectors.

C. Problems

NONE.



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