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E 73-10518  
CR-131481

Detecting Changes in Water Quality and Surface Area in Tahoka Lake, Lynn County, Texas, Using Sequential ERTS MSS Data.

Discipline Category: 4-M Water Resources - Other

ERTS Frame Number: E 1078-16524 9 Oct., E 1114-16532 14 Nov.,  
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### Introduction

ERTS MSS data from three passes over Lynn County, Texas were temporarily overlaid, i.e., spatial registration of data from three ERTS passes on a point by point basis. Resolution of the resulting data was not significantly reduced because the overlaid points were within one-half of a resolution element of the base data.

### Procedure

A non-supervised classification was made of Tahoka Lake using the infrared bands (MSS 6 and 7) for the three overlaid dates.

### Results

Classes from the non-supervised classification are normally based entirely on spectral data, but because the data used in the above classification were from three dates, classes were based on both spectral and temporal differences. It was found that there were four major types of classes: (1) classes which were not water on any of the three days, (2) classes which were water for all three days, (3) classes which were water on only two days, and (4) classes which were water on only one day. By analyzing the arrangement of these points, changes in water surface area can be observed. Deep and/or clear water can be distinguished from shallow and/or turbid water by comparing the class means provided by the classification.

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(E73-10518) DETECTING CHANGES IN WATER  
QUALITY AND SURFACE AREA IN TAHOKA LAKE,  
LYNN COUNTY TEXAS, USING SEQUENTIAL ERTS  
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