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NORTH CAROLINA STATE UNIVERSITY AT RALEIGH

SCHOOL OF PHYSICAL AND MATHEMATICAL SCIENCES

DEPARTMENT OF GEOSCIENCES  
Box 5966 ZIP 27607

Investigation Title: Utilization of ERTS-A data in Geological Evaluation  
~~Evaluation~~, Regional Planning, Forest Management, and Water Management  
in North Carolina

Proposal No. 18

GSFC ID UN 281

Principal Investigator: Charles W. Welby *Charles W. Welby*

Date: November 30, 1972

The objective of the contract is to demonstrate the usefulness of ERTS-1  
data to various state and local agencies.

The period September 1 to October 30, 1972 was spent in examining the initial  
images and working with various state agency personnel to familiarize them  
with the imagery.

An insufficient amount of imagery had been received by November 1 to permit  
more than cursory examination of the imagery and to discuss possibilities  
for its use with various cooperating agencies. Regional planning agencies  
as well as the state planning agencies will begin active evaluation of the  
imagery during the November-December interval.

Because of the limited amount of imagery available, there have been no attempts  
made to make cost/benefit studies.

At this point in time the funds appear adequate to complete the contract.

(E72-10280) UTILIZATION OF ERTS-A DATA IN  
GEOLOGICAL EVALUATION, REGIONAL PLANNING,  
FOREST MANAGEMENT, AND WATER MANAGEMENT IN  
NORTH CAROLINA C.W. Welby (North Carolina  
State Univ.) 30 Nov. 1972 3 p CSCL 08H G3/13  
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Mineral Resources, Geological Structures and Landform Surveys

A. Structural Surveys

Structural trends in the volcanic slate belt may be recognized in Image No. 1045-15254, near High Rock Lake and Baden Lake. The geologic quadrangle map of the area (U.S.G.S. GQ-872) indicates the presence of a southward-plunging syncline. The northeast-trending Paleozoic granitic intrusives between 10 and 15 miles northwest of Greensboro are clearly recognizable as linear features.

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Land Use Survey and Mapping a Land Use Classification

Color additive viewing and simple visual examination of ERTS-1 imagery demonstrates its usefulness in first order land use classification in North Carolina. Comparison of pre-ERTS-1 maps of various vintages with ERTS-1 imagery shows the growth of North Carolina cities. The imagery will be very useful in updating regional patterns of urbanization (ERTS-1 Image No. 1045-15254) and in studying patterns of land use change.