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# United States Senate

COMMITTEE ON COMMERCE, SCIENCE,  
AND TRANSPORTATION

WASHINGTON, DC 20510-6125

KEVIN G. CURTIN, CHIEF COUNSEL AND STAFF DIRECTOR  
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July 15, 1991

Dr. Leonard A. Fisk  
Associate Administrator for Office of Space  
Science and Applications  
National Aeronautics and Space Administration  
400 Maryland Avenue, S.W.  
Washington, D.C. 20546

Dear Len:

As you know, Landsat data has been collected continuously since 1972. With the launch of the National Aeronautics and Space Administration (NASA) Earth Observing System (EOS) polar platform in 1998, Landsat data could provide a 26-year head start to NASA's Mission to Planet Earth program.

As we discussed in the Senate Commerce Science, Technology, and Space Subcommittee on April 24, 1991, existing Landsat data provides a unique baseline of information about land conditions and changes during the 1970's, 1980's, and early 1990's that is not available from any other existing source. Environmental "inventory" data from the Landsat series of satellites is particularly suited to the long-term estimation and monitoring needs of the United States global change effort.

Landsat data is vital for measuring rates of deforestation, desertification, the movement of fragile ecosystem boundaries, and changes in vegetative cover and other land surface/land cover types. These data are crucial both as early indicators of climate change and changes in the chemical composition of the atmosphere.

As you are aware, currently archived Landsat data exists in several different formats, which in some cases can only be processed on one-of-a-kind hardware/software systems. The data is becoming unreadable due to magnetic tape degradation or processing system obsolescence. Only a fraction of the data has been converted to a maintainable medium (either durable and not subject to degradation or periodically re-recordable). For example, only about ten percent of the approximately 400,000 MSS scenes acquired between 1972 and 1978 have been converted to usable, computer-compatible tape (CCT) format. The remainder are stored on aging and deteriorating wide-band videotapes (WBVT's) with no system available to process the data to a usable form. Similarly, since 1978, approximately 400,000 additional MSS scenes and 170,000 Landsat TM scenes have been acquired, and only five percent (of the TM data) has been converted to a usable CCT format.

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FISK, Dr. Leonard A.

The issue of long-term conversion of Landsat data to a maintainable medium applies to all of the Landsat data acquired to date, of which approximately one-half is over ten years old and deteriorating.

Because of funding limitations since 1984, National Oceanic and Atmospheric Administration and the United States Geological Survey (USGS) Landsat archiving activities have been restricted to data maintenance. Large amounts of early environmental "inventory" Landsat data will continue to be lost due to tape degradation and other reasons unless additional funding is provided to transfer the data to a more permanent and retrievable storage medium. For this reason and because this data is so critical to EOS, I would like to pursue an amendment to the NASA appropriations bill, or some other appropriate vehicle, that would direct the Administrator of NASA to use \$20 million of available funds and cooperate with the USGS to convert the past nineteen years of Landsat data to a more durable archive medium.

Before initiating this action, I would request your comments on the value of such an amendment to NASA's global change effort. Thank you for your attention to this matter.

Sincerely,



Larry Pressler  
United States Senator

LP/dnc