Publications

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Environmental Evaluation of Water Resources Development

W. P. James, C. E. Woods, R. E. Blanz

- Full Text

Methodology for the utilization of LANDSAT-1 imagery and aerial photography on the environmental evaluation of water resources development is presented. Environmental impact statements for water resource projects were collected and reviewed for the various regions of Texas. The environmental effects of channelization and surface impoundments are discussed for twelve physiographic regions of the state as delineated on black and white satellite (LANDSAT-1) mosaic of band 7. With the aid of LANDSAT-1 imagery, representative or typical transects were chosen within each region. Profiles of each site were constructed from topographic maps and environmental data were accumulated for each site and related to low altitude aerial photography and enlarged LANDSAT-1 false color composites.

Each diagrammatic transect, with accompanying data and photographs, provides significant information for input of environmental amenities on a local and regional scale

into preliminary water resources development studies. The utilization of the transects provides a visual display of available information, aids in the identification and inventory of resources, assists in the identification of data gaps and provides a planning tool for additional data acquisition.

Remote sensing techniques are readily adapted to water resources planning. LANDSAT-1 imagery as well as conventional low altitude aerial photography provides the planner with a synoptic overview of the resource area. The delineation of physiographic regions by LANDSAT-1 imagery will be helpful in defining delicate border areas and delineating broad environmental areas.

Satellite imagery is applicable for transect siting in aerial river basin studies or regional analysis. The diagrammatic transects along with satellite imagery can be used to grossly quantify habitat types and amounts.

The transects and accompanying data can be used in displays for public hearings and project monitoring. They lend themselves to constant update and can be included in resulting environmental impact statements.

Texas Water Resources Institute

1500 Research Parkway A110
2260 TAMU
College Station, TX 77843-2260

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Phone: 979.845.1851
Fax: 979.845.0662
Email: twri@tamu.edu