

## Geographic Information Systems Field Unit

This is a summary of the types of activities carried out by the Geographic Information Systems Field Unit. It is meant as an aid to understanding the variety of work done by the unit. Projects vary greatly in scope and complexity; therefore, this description is general and simplified but can be used to characterize the particular kind of project or level of effort desired. There are five major types of work:

Manual Photointerpretation and Thematic Map Production - Traditional photointerpretation and mapping techniques are used to produce resource (thematic) maps such as vegetation or land use. No computerized data base is produced in this type of project although these thematic maps can be entered into a computerized data base at a later date.

Computerized Data Base Construction - A computerized data base is constructed by: 1) entering into the computer (digitizing) existing resource maps available at the park, and/or 2) entering into the computer topographic and remote sensing data which are already in a computerized form (digital data). Both methods are independent; however, a combination of the two is frequently used to build a comprehensive data base. The specific data types and methods used to construct the data base will be determined by the needs of the park and the availability of data. The acquisition of remote sensing data for the production of particular thematic maps can also be arranged by the unit.

Analysis of Existing Computerized Data Bases - A geographic information system (GIS) is used to answer specific questions about the park or region. A GIS is an automated system for creating, managing, analyzing, and displaying mapped information. It contains a geographically registered data base of your park's resource information and is used to answer questions about the resources of your park. A GIS is especially efficient when questions involve simultaneous analysis of multiple resources or themes. For example, you might want to know if any wetlands occur within 1,000 feet and downslope from park roads or utility corridors thus making them susceptible to salt or chemical runoff. Answers to questions can be in the form of maps, tables, and/or graphs. Until computer equipment is available to the park, these analyses will be conducted at the unit office in Denver.

Establishing a GIS at the Park or Region - The unit will provide technical assistance and support to any park or regional office in setting up a GIS in the field. Advice on software and hardware requirements as well as training personnel in the use of the system will be provided. This project type will probably have to go through the annual priority setting process since, in most cases, the length of time required will be considerable.

Technical Assistance and Support - This activity will make up a considerable portion of the unit's annual workload. It will include advice and assistance to parks on the following subjects:

1. Basic mapping considerations--what to map and how to map it
2. Availability and sources of remote sensing data--aerial photographs and satellite images or other digital data
3. Availability of other types of computerized data--topographic, roads, and boundaries
4. Analysis of user needs
5. Construction of a data base through contract with another organization
6. Other technical questions relating to remote sensing and GIS's

Ecological Data Bases - This activity currently involves the construction and maintenance of the NPFLORA data base, a computerized inventory of vascular plants in the National Park System. The unit updates this data base regularly and routinely provides parks and regions with current listings and handles specific questions as they arise.

Each fiscal year, the unit's workload will be determined through a Servicewide priority setting process in which each region will participate. This process will be worked out later this year. Technical assistance will be handled on an "as needed" basis unless a request will require more than a few days' work to resolve. Such requests will then be considered in the priority setting process along with other proposed projects for the year.

While the unit has been base funded, certain project-specific costs will need to be paid by the park or region. These include the cost of data acquisition, time-share computing, and contracting for special computer services as needed. The amount will vary considerably depending on the project and the eventual in-house computing capability available at the unit.