

From Indiana Dunes

The Science Division of Indiana Dunes NL has developed a computer system that enables us to do a wide variety of data analysis tasks with ease. The hardware consists of a Datapoint 8200 CRT terminal, a Datapoint 9621 serial dot (132 column width) matrix printer, an IBM PC with an Asynchronous Communications Card, and several modems. We hope to acquire a letter quality printer so the PC can be used for word processing and letter typing. Our piecemeal acquisition of the total system resulted in some difficulties.

Using the Datapoint terminal through a modem phone line we can hook up to the Boeing Computer

Services (BCS) office in Chicago and access their mainframe IBM 370 computer at Vienna, Va. They possess the Time Sharing Option (TSO) which enables us to keypunch data sets directly into computer files on disk. BCS also maintains several statistical software system packages that allow us to perform many kinds of analysis. Additional programs can be added to the files as needed. We are also able to print quickly the results of any data analysis.

One difficulty is that once data sets are deleted from TSO, there only are two very time consuming options for recreating the data sets; 1) if the data are on cards they have to be reread through a card reader or 2) the data can be re-entered by hand on the CRT terminal. Of course it costs to keep data sets in TSO files even when you are not using them; if you have over 50 files, it can be quite expensive.

The IBM PC solves these problems. Through the asynchronous card and modem phone line it is possible to communicate directly with the BCS computer. Consequently, data sets can be created and stored on PC floppy diskettes and through the above mentioned setup it is possible to recreate data set files on TSO within minutes. Other advantages include never using computer cards, storing data sets in a compact form and most importantly, saving computer costs.

Glitches on the phone line caused by poor connections can be a problem. Another problem is the requirement for a special cable so that the IBM PC can be connected to our high speed printer. A printer should be purchased with the terminal. Otherwise, output must be printed at a BCS office and mailed to you. Much time can elapse before discovering you made a Job Control Language or syntax error in your program, especially when the operator is unfamiliar with the software.

Application of the system has involved the analysis of large complex data sets generated from research and applied towards solution of resource management problems. Examples include the analysis of environmental data from road salt on impacted and unimpacted portions of Pinhook Bog, analysis of vegetation data to understand the successional processes in razed residential sites, the classification of vegetation to develop a vegetation map of dewatered pond beds, and the study of plant community patterns in prairie ecosystems.

We also have used the IBM PC to store herbarium data and information concerning the occurrence of rare plants. Resource management has written a program to fill out scientific literature request forms from the Interior Department library. Other resource management applications include storing and analyzing road kill statistics, deer fat data, fire weather information and eventually, effects of controlled burns on small mammal populations.

In the future, we hope to add a color graphic terminal, increase the storage capabilities of our PC, and purchase additional terminals. Thus, the combination of a printer, a terminal, and a personal computer that can be linked to Boeing Computer Services enables data to be stored and analyzed in an efficient and inexpensive manner. With such capabilities, almost any analysis problem is solvable.

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