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THE BASELINE INFORMATION SYSTEM--USER'S MANUAL. (U)
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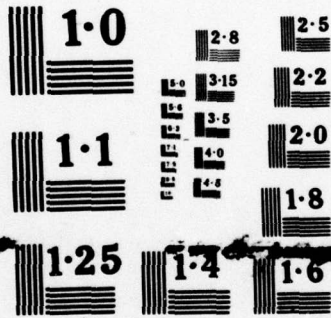
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TECHNICAL REPORT N-72
April 1979

Development of Environmental Technical Information

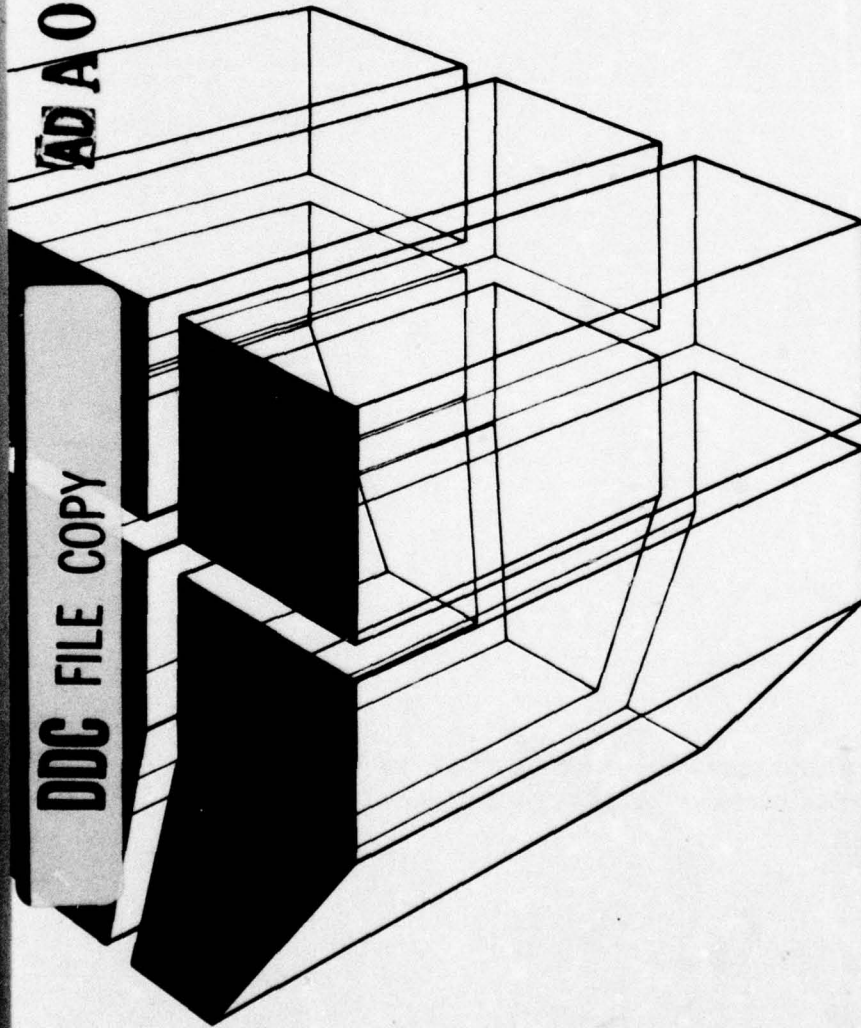
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THE BASELINE INFORMATION SYSTEM—
USER'S MANUAL

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James E. Hays
JAMES E. HAYS
Colonel, Corps of Engineers
Commander and Director

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) → The Baseline Information System (BLIS) is an extension of the Environmental Impact Computer System (EICS) and a subsystem of the Environmental Technical Information System (ETIS). BLIS was developed to provide EICS users with site-specific data or to identify for EICS users possible sources of such data. The BLIS data base was developed by: 405 279 <i>Shu</i>		

Block 20 continued.

1. Aggregating EICS attribute identifications with common technological bases into search terms ;
2. Compiling and analyzing directories of regional experts and conservationists, universities, and existing data management systems ;
3. Developing a data file which identifies the aggregate keyword designation, the EICS attributes pertaining to the keyword, points of contact and appropriate geographic/political references ;
4. Developing a user-oriented software package for inclusion into ETIS.

This report provides BLIS user instructions and serves as a guide for the retrieval and use of appropriate points of contact or consultation for environmental baseline data.

FOREWORD

This project was performed for the Directorate of Military Programs, Office of the Chief of Engineers (OCE), under Project 4A762720A896, "Environmental Quality for Construction and Operation of Military Facilities"; Task 01, "Environmental Quality Management for Military Facilities"; Work Unit 002, "Development of Environmental Technical Information." Mr. V. Gottschalk, DAEN-MPE, was the OCE Technical Monitor.

This research was made possible through the efforts of Department of the Army personnel, U.S. Army Construction Engineering Research Laboratory (CERL) scientists, and cooperating scientists at the University of Illinois.

Administrative support and council was provided by Dr. R. K. Jain, Chief of the CERL Environmental Division (EN). COL J. E. Hays is Commander and Director of CERL, and Dr. L. R. Shaffer is Technical Director.

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THE BASELINE INFORMATION SYSTEM— USER'S MANUAL

1 INTRODUCTION

Background

The National Environmental Policy Act (NEPA) of 1969¹ requires all Federal agencies, including the Department of the Army (DA), to assess the environmental impacts of their major actions and programs. These assessments are to be documented in formal Environmental Impact Assessments (EIAs) and Environmental Impact Statements (EISs). To help DA respond to these requirements, the U.S. Army Construction Engineering Research Laboratory (CERL) has developed the Environmental Technical Information System (ETIS),² a collection of computer subsystems which act as tools in the environmental planning process. One of these tools, the Environmental Impact Computer System (EICS),³ is a methodology for identifying potential impacts of specific DA actions. The responsibility for providing information to EICS and for the interpretation of EICS output rests with the user. To use EICS, two levels of project-specific baseline information are necessary: one at the level during which the user is responding to the filter operations of EICS, and another at the interpretation level, during which the user is trying to take the identified potential impacts and systematically address them for inclusion in the final EIS.

Objective

The objective of this report is to describe the Baseline Information System (BLIS), a subsystem of ETIS which provides EICS users with site-specific data or identifies possible sources of such data.

Approach

The BLIS data base was developed in the following steps:

¹The National Environmental Policy Act of 1969 (42 USC 4321-4347).

²R. D. Webster, R. L. Welsh, and R. K. Jain, *Development of the Environmental Technical Information System*, Interim Report E-52/ADA009668 (U.S. Army Construction Engineering Research Laboratory [CERL], April 1975).

³E. Y. S. Lee, R. K. Jain, E. K. C. Lee, and B. E. Goettel, *Environmental Impact Computer System*, Technical Report E-37/ADA787295 (CERL, September 1974).

1. The attribute identifications used in EICS were aggregated into search terms having a common technological basis; the terms were closely enough interrelated to essentially function as one search term.⁴

2. Directories of regional experts and conservationists, universities, and information regarding existing data management systems were compiled and analyzed. This analysis was used as a basis for defining potential points of contact for investigation or analysis of potential impacts identified by EICS.

3. A data file identifying the aggregate keyword designation, the attributes pertaining to the keyword, points of contact, and appropriate geographical/political references (states) was developed. (See Appendix.)

4. A user-oriented software package was developed for inclusion into ETIS to allow the keyword accession of references and/or points of contact.

Mode of Technology Transfer

The information in this report will be issued as a DA Pamphlet in the 200 series and as the module called BLIS in the remote terminal ADP system entitled Environmental Technical Information System (ETIS).

2 USER REQUIREMENTS

A variety of environmental analysis tools are available from ETIS:*

1. EICS—A system for identifying potential environmental impacts

2. The Computer-Aided Environmental Legislative Data System (CELDS)—a system for identifying institutional constraints associated with certain types of DA actions

3. The Economic Impact Forecast System (EIFS)—a system for assessing socioeconomic impact of Army actions

⁴For a detailed explanation of EICS attribute identifications, see *Environmental Impact Computer System Attribute Descriptor Package Reference Document*, Technical Report E-86/ADA024303 (CERL, April 1976).

*Several new tools are currently under development.

4. The Clearinghouse Information System (CHIS)—a system for identifying coordinating agencies at a local level⁵

5. The Baseline Information System (BLIS)—a system which allows the user to identify points of contact or data systems necessary for preparing an EIS. Points of contact are identified as sources for (a) obtaining baseline data, or (b) interpreting existing knowledge of a localized area without an extensive data collection effort. For example, a point of contact could be an expert familiar with local environmental conditions. While this approach does not provide distinct information, it is inexpensive and adds technical expertise to the decision-making process.

Since it is imperative that this additional information be provided with a minimum amount of required technical training and be available at sufficiently low cost as to encourage its use, CERL's centralized technical information data base and environmental planning has proven useful in satisfying the resource requirements of the user. Figure 1 is a schematic illustrating subsystems that currently comprise ETIS and their relationships, both to each other and to the environmental planning process as a whole.

3 SYSTEM DESCRIPTION

Overview

Data Acquisition

BLIS is designed to be a constantly changing data base in which entries are kept as current as possible. The initial data acquisition was accomplished through a review of various directories of regional experts, conservationists, and universities, and other publications which identified potential sources of environmental information. While not an inclusive or static data base, the initial data will form the basis for this version of BLIS. The data will be updated and refined through

⁵E. Y. S. Lee, et al., *Environmental Impact Computer System*, Technical Report E-37/ADA787295 (CERL, September 1974); R. D. Webster, et al., *Development of the Economic Impact Forecast System (EIFS)—The Multiple Aspects*, Technical Report N-35/ADA057936 (CERL, November 1977); J. Van Weringh, et al., *Computer-Aided Environmental Legislative Data System (CELDS) User Manual*, Technical Report N-56/ADA061126 (CERL, September 1978); R. D. Webster, et al., *Clearinghouse Information System: Description and User Instructions*, Technical Report N-53/ADA059176 (CERL, August 1978).

both user interaction with BLIS and by the facility maintaining the data base; this maintenance function is part of the ongoing structured data base update for ETIS.

File Structure

Since it seemed reasonable that the user would want to specify an EICS environmental attribute or attribute grouping and locality for consideration, BLIS data were structured so that the points of contact were associated with both a group attribute number and a state. (See Appendix.) The user can elect to retrieve all the contacts for a selected group attribute or only those in a user-defined region (regions are defined at a state level in BLIS). Figure 2 is a sample of the BLIS data base. The number to the left in the figure represents the associated group attribute; the state abbreviations indicate the group attribute's location. This type of organization allows the user to be more or less selective in requesting output from BLIS.

System Implementation

BLIS was implemented on the PDP 11/45 minicomputer.

The interactive form of BLIS is especially useful to an ETIS user, who requires a list of contacts as quickly and easily as possible. The interactive form enables the user to obtain the information immediately following the use of EICS. The batch alternative, on the other hand, requires the user to submit his/her request, process the request, and receive the results by mail—a procedure which may take several days. The manual alternative is even less desirable because it is (a) expensive and (b) unable to provide up-to-date information in book form.

The update process for the BLIS data base is simple and readily accomplished by use of the Unix Operating System editor. Updates can occur daily if desired, assuring the user of complete and accurate information. A centralized update, as opposed to an ad hoc, individual-based update, is easy to implement and saves money by increasing the efficient use of planning data.

4 INTERACTIVE USER INSTRUCTIONS

The use of BLIS is meant to be simple and straightforward. User interfaces are designed so that the layman can interact easily with the system, with minimum assistance from the user manual.

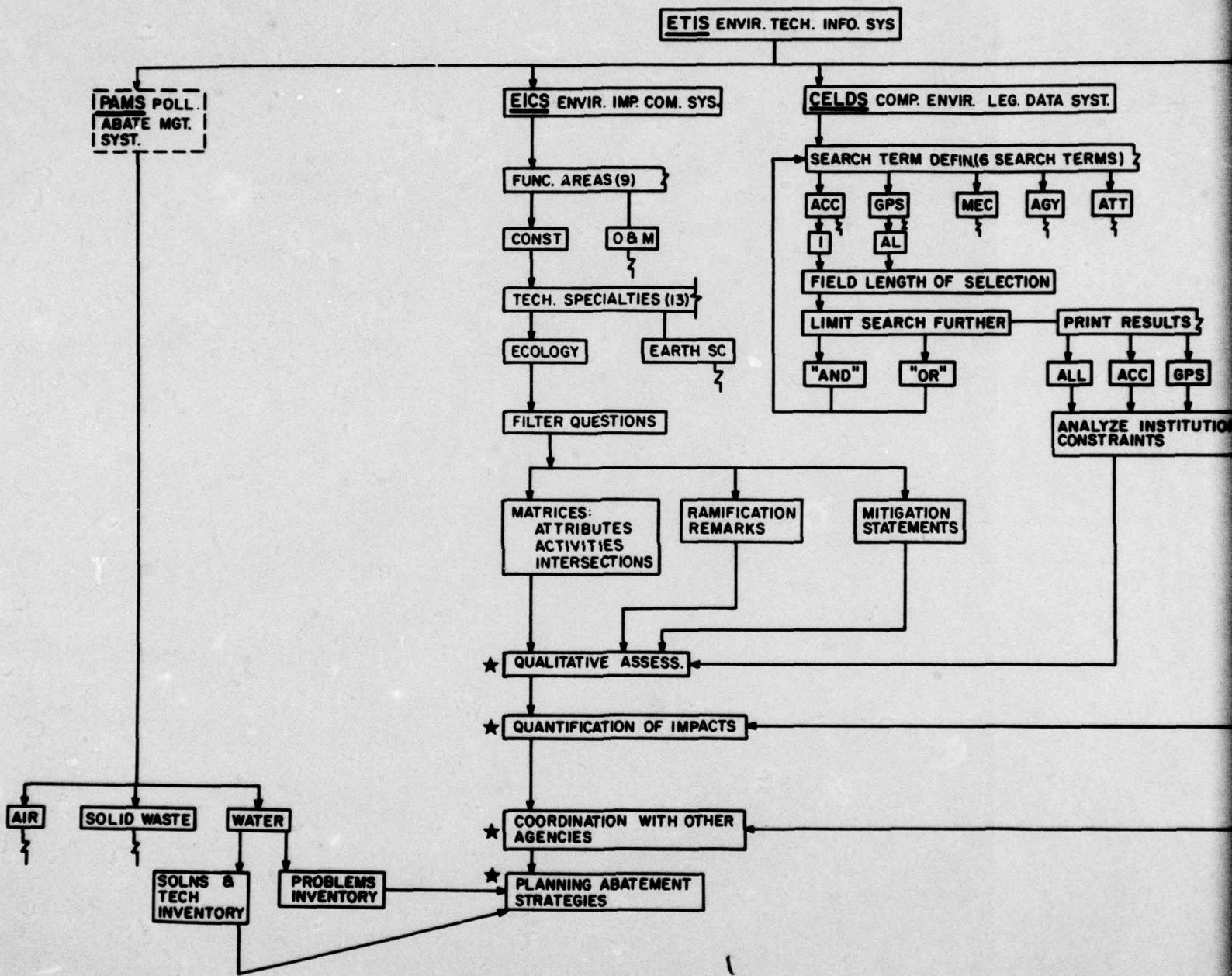
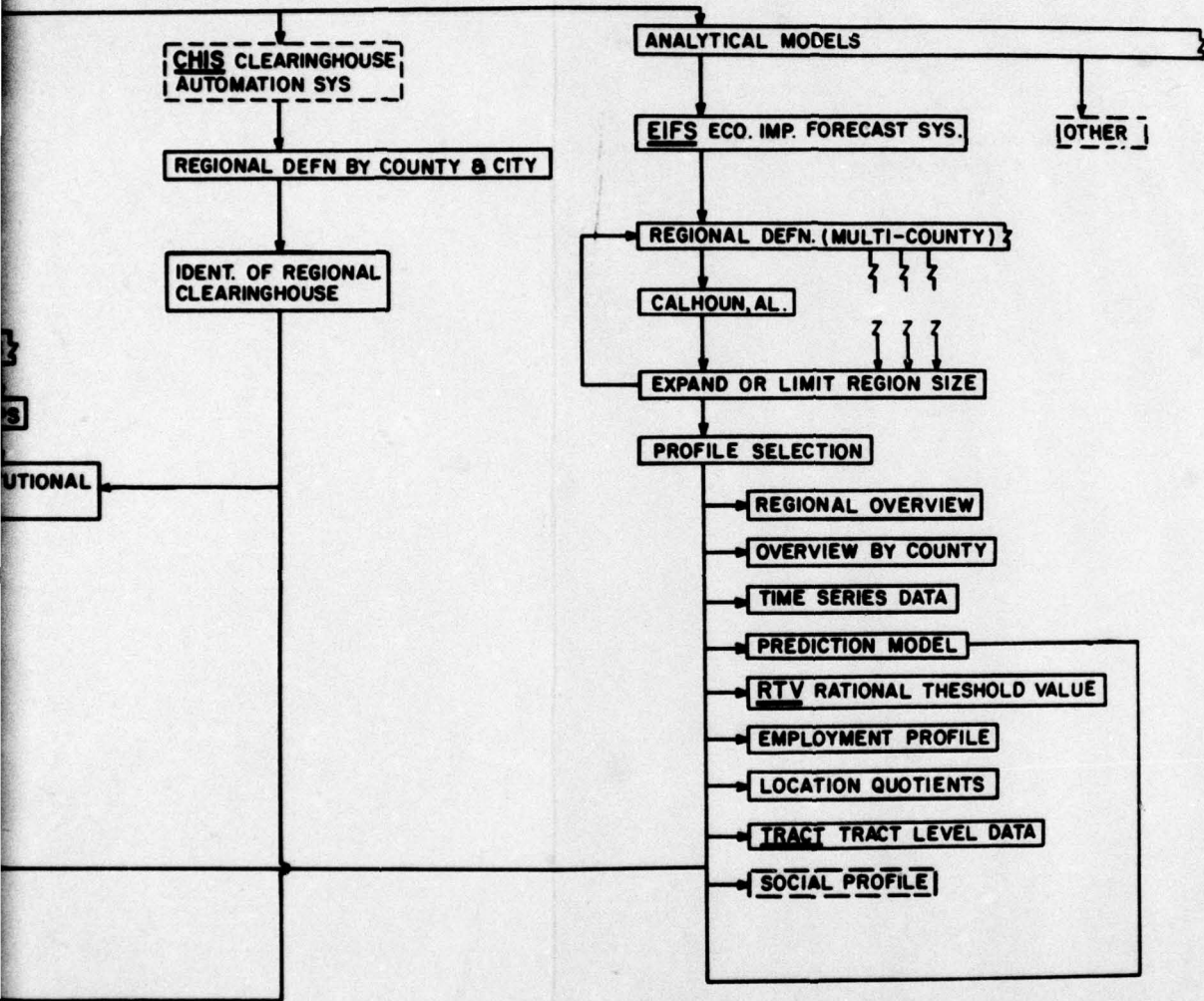


Figure 1. Subsystems of ETIS.



2

2	Alabama Dept. of Conservation and Natural Resources	AL
	64 North Union Street	
	Montgomery, AL 36104	
	205-269-7221	
	Claude D. Kelley, Commissioner	
2	Alaska Dept. of Fish and Game	AK
	Subport Building	
	Juneau, AK 99801	
	907-465-4100	
	James W. Brooks, Commissioner	
2	Arizona Game and Fish Dept.	AZ
	2222 W. Greenway Road	
	Phoenix, AZ 85023	
	602-942-3000	
	Robert A. Jantzen, Director	
2	Arkansas Game and Fish Commission	AR
	Game and Fish Building	
	Little Rock, AR 72201	
	501-371-1145	
	Andrew H. Hulsey, Director	
2	California Dept. of Fish and Game	CA
	The Resources Agency	
	1416 9th Street	
	Sacramento, CA 95814	
	916-445-3535	
	E. Charles Fullerton, Director	
2	Colorado Dept. of Natural Resources	CO
	Division of Wildlife	
	6060 Broadway	
	Denver, CO 80216	
	303-825-1192	
	Jack R. Grieb, Director	
2	Connecticut Dept. of Environmental Protection	CT
	State Office Building	
	Hartford, CT 06115	
	203-566-5460	
	Theodore B. Bampton, Deputy Commissioner	
2	Delaware Dept of Natural Resources and Environmental Control	
	Division of Fish and Wildlife	
	D Street	
	Dover, DE 19901	
	302-678-4431	
	Darrell Louder, Director	
2	District of Columbia Metropolitan Police	DC
	300 Indiana Avenue, NW	
	Washington, DC 20001	
	202-626-2305	
	Maurice J. Cullinane, Chief of Police	
2	Florida Dept. of Natural Resources	FL
	620 S. Meridian	
	Tallahassee, FL 32304	
	904-488-2972	
	Harmon W. Shields, Executive Director	
2	Georgia State Game and Fish Division	GA
	Trinity-Washington Building	
	270 Washington Street	

Figure 2. Sample BLIS data base.

Proper Terminal Settings and Login

To establish contact with the CERL ETIS computer system, the user must

1. Set his/her terminal on "full duplex," "30 cps," and "on-line."
2. Dial either (217) 333-0129 or (217) 333-1587.
3. Login with an appropriate login name and password. For example (user responses are underlined):

CSO NETWORK UNIX

NAME: webster Login supplied to user by CERL

PASSWORD: (to be assigned) The password will not appear on the terminal when it is typed.

System Usage

Once the login has been accomplished, the system may respond with messages. For example:

LAST LOGIN THU JUL 6 08:36:50 1978

JUL 78 MAN COMMAND NOW DOES AUTOMATIC PAGING IF OUTPUT IS TO AN INFOTON ("MAN MAN" FOR MORE INFO.)

DEV/RRP5: 5335 . . . BELOW 1000 INDICATES A SPACE SHORTAGE; ACT ACCORDINGLY.

These messages relay pertinent information to the systems' users, such as "downtime" for the computer system, or general information which does not pertain to ETIS users but is intended for other users of the same computer.

Some users, when logged in, will have immediate access to ETIS. In such cases, the prompt "%" will not appear on the terminal and the "ETIS" command (discussed below) is not necessary. These distinctions are made to accommodate two classes of ETIS users: (1) those using only ETIS, and (2) those capable of performing other tasks with ETIS such as file editing, program alteration, and so forth.

The prompt signals the user that the computer is ready to accept a command. To gain access to ETIS, the user must type "etis":

%etis

The system will respond:

WELCOME TO CERL'S ENVIRONMENTAL
TECHNICAL INFORMATION SYSTEM

WHAT PROGRAM? (TYPE <CR> TO SEE LIST)

"<CR>" refers to the carriage-return key. If this key is used at this point (and at other designated points in ETIS), the user will receive assistance regarding further options or commands. For example, when <CR> is pressed following the query "WHAT PROGRAM?", the system responds:

TYPE 1	FOR INTRODUCTION TO ETIS
TYPE 2	TO RUN EICS
TYPE 3	TO RUN CELDS
TYPE 4	TO RUN EIFS
TYPE 6	TO RUN CLEARINGHOUSE
TYPE 7	TO RUN AIR FORCE EICS
TYPE 8	TO RUN BLIS
TYPE !MAIL	TO SEE YOUR MAIL
TYPE CTRL-D	TO EXIT

The user can select the subsystem desired; in this case, the user types "8" to gain entry to BLIS:

WHAT PROGRAM? (TYPE <CR> TO SEE LIST) 8

After a pause, the system will respond with identification and a query.

THE BASELINE INFORMATION SYSTEM

ENTER GROUP ATTRIBUTE NUMBER?

If the user is unsure what group attribute number is appropriate, he/she may request BLIS to printout a list of group attribute numbers and a short description of each by typing "?".

To retrieve by region, the user enters state name(s) or abbreviation(s). Enter "all" to retrieve all available contacts for the selected attribute.

If an erroneous or misspelled state name is entered, the system will offer to provide a list of states; i.e., the user will be required to respond "yes," "y" or "no," "n," to the following question:

WOULD YOU LIKE TO SEE A LIST OF STATE NAMES?

To exit BLIS, the user presses a carriage return, <CR>, at the appropriate query. Terminating BLIS returns the user to ETIS where another program may be selected. To exit ETIS, the user simply types "bye." On one type of user account, terminating ETIS logs the user out of the system whereas on the other type of user account the user will be returned to Unix. For the latter type of account, logging out can be accomplished by typing "logout," "cntrl-d" (pressing the "cntrl" button and the "d" button simultaneously), or simply hanging up the phone.

Figure 3 is a sample BLIS user session regarding information about the soil characteristics in the Tennessee-Kentucky region. The output received consists of the names and addresses of the state soil conserva-

```
Enter group attribute number (<CR> for list): 3
you have selected:
    soil conservation service, field biologist

Enter state (<CR> if done): tn
Next state (<CR> if done): ky
Next state (<CR> if done):

Points of contact are:

State S.C.S. Soil Conservationists KY
333 Waller Avenue
Lexington, KY 40504
606-252-2312
Glen E. Murray

State S.C.S. Soil Conservationists TN
561 U.S. Court House
Nashville, TN 37203
615-749-5471
Donald C. Bivens
```

Figure 3. Sample BLIS run.

tionists in the states of Tennessee and Kentucky whom the user may contact for information.

5 CONCLUSION

This report describes BLIS, a system for identifying and/or providing potential sources of site-specific environmental baseline data which are useful for interfacing with EICS. Since BLIS is a subsystem of ETIS, and since site-specific economic and related social data are already available in EIFS, another subsystem of ETIS, much of this information can be accessed directly. BLIS can save considerable time and resources by providing these data from existing secondary sources.

REFERENCES

- Environmental Impact Computer System Attribute Descriptor Package Reference Document*, Technical Report E-86/ADA024303 (U.S. Army Construction Engineering Research Laboratory [CERL], April 1976).
- Lee, E. Y. S., R. K. Jain, E. K. C. Lee, and B. E. Goettel, *Environmental Impact Computer System*, Technical Report E-37/AD#787295 (CERL, September 1974).
- The National Environmental Policy Act of 1969* (42 USC 4321-4347).
- Van Weringh, J., et al., *Computer Aided-Environmental Legislative Data System (CELDS) User Manual*, Technical Report N-56/ADA061126 (CERL, September 1978).
- Webster, R. D., et al., *Clearinghouse Information System: Description and User Instructions*, Technical Report N-53/ADA059176 (CERL, August 1978).
- Webster, R. D., et al., *Development of the Economic Impact Forecast System (EIFS): The Multiplier Aspects*, Technical Report N-35/ADA057936 (CERL, November 1977).
- Webster, R. D., et al., *Development of the Environmental Technical Information System*, Interim Report E-52/ADA009668 (CERL, April 1975).

**APPENDIX:
ATTRIBUTE DESIGNATIONS**

	Initial Contact for Information about the Installation	Initial Contact for Information about the State or Region
ECOLOGY:		
Large Mammals	20, 21, 1	2, 3, 4, 5, 6
Small Mammals	20, 21, 1	2, 3, 4, 5
Birds	20, 21, 1	2, 3, 4, 5
Fish	20, 21, 1	2, 4, 6, 5, 3
Reptiles	20, 21, 1	5, 2, 3, 4
Amphibians	20, 21, 1	5, 2, 3, 4
Other Animals	20, 21, 1	2, 3, 4, 5, 6
Endangered Animal Species	20, 21, 1	2, 3, 4, 5, 6
Trees	19, 21, 9, 8, 10	11, 14, 18, 12, 3
Shrubs	21, 19, 8, 10, 9	18, 3, 12, 11, 14
Herbs	21, 19, 10, 8, 9	18, 3, 12, 13, 11, 14
Algae	19, 21	18, 14, 11, 3
Fungi	19, 21	18, 14, 11, 3
Lichens	19, 21	18, 14, 11, 3
Other Plant Species	21, 19, 9, 10, 8	18, 14, 11, 3
Endangered Plant Species	19, 21, 9	18, 14, 11, 3
Food Webs	19, 20, 21	3, 12, 5, 18, 14
Productivity	19, 20, 21	3, 12, 5, 18, 14
Seasonal Aspect	19, 20, 21	3, 12, 5, 18, 14
Stratification	19, 20, 21	3, 12, 5, 18, 14, 11
Successional Stage	19, 21, 20	3, 11, 12, 5, 18, 14
Small Game Hunting	20, 21, 1	2, 4
Waterfowl Hunting	20, 21, 1	2, 4
Big Game Hunting	20, 21, 1	2, 4
Bottom Life	20, 21, 1	2, 3, 4, 5
Warm Water Fishing	20, 21, 1	2, 3, 4, 5
Cold Water Fishing	20, 21, 1	2, 3, 4, 5
Large Lake Fishing	20, 21, 1	2, 3, 4, 5
Coastal Water Fishing	20, 21	6, 2, 3, 4, 5
Shellfish	20, 21, 1	6, 2, 3, 4, 5
Deep Sea Fishing	20, 21	6, 2, 3, 4, 5
Disease Vectors	17, 46, 20, 21	15, 16
Noxious Weeds	17, 19, 21, 8, 46	18, 13, 3, 11, 14
Other Undesirable Species	17, 19, 20, 21, 8, 46	3, 2, 13, 5, 18
HEALTH SCIENCE:		
Pollen	17, 46, 21	15, 22
Virus	17, 46	15, 16, 22
Rickettsia	17, 46, 20	15, 22, 16
Bacteria	17, 46, 20	15, 22, 16
Protozoa	17, 46, 20	15, 22, 16
Bacteria	17, 46, 20	15, 22, 16
Fungi	17, 46, 21	15, 22, 16
Worms	17, 46	15, 22, 16

	Initial Contact for Information about the Installation	Initial Contact for Information about the State or Region
HEALTH SCIENCE (cont'd):		
Arthropods	17, 46, 20, 21	15, 22
Carbon Monoxide		
thru Selenium	17, 46	15, 23, 22
Pesticides and Residues	17, 46, 20, 21	15, 23, 22
Barium thru Ethers	17, 46	15, 23, 22
Work Overexposure	24, 25	26
Inadequate Training	24, 25	26
Dislocation Adjustments	25	26
Army Discipline	25	26
Personnel Policies	25	26
Physical Overexposure	25, 27	26, 15
Economic Hardships	25, 27	26, 15
Military Secrecy thru		
Traumatic Experiences	25	26
Pollutant Overexposure	25, 17, 27	26, 15
Housing Conditions	25	26
Population Change	25	26
Transportation Safety	24	28, 29
Residential or Home Area	24	30
Community/Marketing	24	30
Work	24	31, 30
Recreation	24	30
Radiation-Ionizing	17, 46, 24, 27	30, 15, 40, 41, 23
Radiation-Microwave	17, 46, 24, 27	30, 15, 40, 41, 23
Radiation-Laser	17, 46, 24, 27	30, 15, 40, 41, 23
Other Radiations	17, 46, 24, 27	30, 15, 40, 41, 23
AIR QUALITY:		
Stability	33	36, 35
Temperature	33	34, 35
Mixing Depth	33	36, 35
Wind Direction and Speed	33	34, 35
Humidity	33	34, 35
Precipitation	33	34, 35
Albedo	---	36, 35
Insulation	---	34, 35
Topography	---	35, 37
(All Other Air Quality)	17, 46	15, 23, 39, 40, 41, 38, 36
SURFACE WATER:		
(All Surface Water)	47, 17, 46	42, 43, 44, 45, 15, 16, 22, 23, 38, 39, 40, 41, 48
GROUND WATER:		
(All Ground Water)	47, 17, 46	42, 43, 44, 45, 15, 16, 22, 23, 38, 39, 40, 41, 48

	Initial Contact for Information about the Installation	Initial Contact for Information about the State or Region
SOCIOLOGY:		
Size	68	49, 51, 52, 53, 54, 57, 50
Composition	68	49, 51, 52, 53, 54
Net Change	68	49, 51, 52, 53, 54, 57, 50
Rural Areas thru		
Urban Fringe	68	51, 52
Age Categories	68	49, 51, 52, 53, 54, 57, 50
Sex Categories	68	49, 51, 52, 53, 54, 57, 50
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Educational Organizations	68	56, 55, 52
Religious Organizations	68	56, 52
Law Enforcement	68	58, 51, 38
Courts	68	60, 52, 51
Political Process	68	61
Welfare and Dependency	68	62, 63, 64, 65
Publics	68	66
Opinion Leaders	68	66
Opinion Process	68	66
Printed Media	68	56, 66
Broadcast Media	68	56, 66
ECONOMICS:		
Population	68, 82, 84	49, 51, 53, 54, 57, 83
Total Income and Output	84, 68, 85	86, 49, 51, 52, 53, 54, 57, 87
Income Distribution	68, 84	49, 51, 86, 87, 53, 65, 62, 63, 64
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