SOFTWARE ON THE CUTTING EDGE

by Edward M. Mair

Computer technology will profoundly affect almost every aspect of birding in the future. Already, there are enough software programs in the market-place to confuse most birders. We hope this guide will bring you up to date and prepare you for tomorrow.

— THE EDITORS

THE PERSONAL COMPUTER APPLICATION most often used by wildlife observers, including bird watchers, is the database management system. Six database management system programs written for IBM PC and compatible computers, selected by the Editor of *American Birds*, will be reviewed and rated here.

A database management system stores information items (e.g. American Robin, Plum Island, 5/11/91) in fields (e.g. Species, Place Seen, Date). A set of such fields related to a single observation is called a record.

A set of records of a related nature (for example, life-list records) is called a file. A sophisticated database management system may go as far as organizing and linking several related files, such as a life-list file, several year-list files, and several state-list files.

It is possible to develop your own database management system from scratch if you know a programming language like BASIC. It is also possible to purchase a database management system application program and design your own birding database system within it. The option chosen by most birders is to purchase a completed system designed by someone else and sold commercially. The programs reviewed here are all of the last type. I have used a scale of five factors to rate these programs.

Cost (*rated from 5 inexpensive to 1 expensive*). How much does it cost? If a program has outstanding power, flexibility, or features it may be worth paying more for.

Ease of Use (*rated from 5 very easy to 1 very difficult*). How easy is it to install the program on the computer? How easy is it to learn and use the program? With any bird-listing program there is the major task of initializing the database by entering all the information you have gathered over the years. This is always time-consuming, but some programs help you avoid typing mistakes by supplying common bird names and help you avoid repetitious data entry by allowing you to set default values for certain fields. For example, if you are entering 99 species seen in your yard you shouldn't have to type your address 99 times.

Basic Functions (*rated from 5 very complete to 1 inadequate*). Once data has been stored what can you do with it? There are some almost universally used functions which any database management system should include. These functions are the ability to search for specific information, the ability to sort a set of records, the ability to list searched and sorted information, the ability to count similar data items, and the ability to apply some basic statistics to sets of numerical data.

Power (*rated from 5 powerful and flexible to 1 weak*). How fast does the program process data? How much flexibility does the user have when retrieving information that has been stored? For users who may want to share their data with others, additional characteristics are also important. Is the way information is stored standardized? Standardization is usually accomplished by including fields for codes that are widely used such as American Ornithologists' Union species number or the four-letter name code used by bird banders. Are the data files portable? How easy is it to move your data files to a different type of computer or to a different database management system on the same computer or into a spreadsheet or word processor? Can you import and export files or sub-sets of records from a file?

Design (*rated from 5 exceptional to 1 poor*) This factor is probably the most subjective. How aesthetically pleasing is the program? How creative, yet well organized, is it? Is the program a joy to work with or is it

COMPUTER EXPERTISE SCALE

Bird Listing Needs Scale	1	2	3	4
1	AVES	BIRDSTAR	BIRDBASE 2	DATAHAWK
2	BIRDSTAR	BIRDBASE 2	DATAHAWK	DATAHAWK
3	BIRDBASE 2	DATAHAWK	DATAHAWK	DATAWAWK
4	DATAHAWK	DATAHAWK	DATAHAWK	PLOVER

tedious and cumbersome? I am willing to pay more for a well-designed program because I can appreciate the extra time and energy that have gone into its development. A new or casual computer user might not care so much about design as long as the job gets done and the price is right. There is no perfect program because a fundamental trade-off exists between ease of use and comprehensiveness of functions. The more a program can do, the more you have to learn. The trick is to have a good understanding of your own needs and to select a program that achieves the right balance for you. The table is provided to help you determine this balance. The scale across the top is your own measure of how experienced, comfortable and fond of computers you are from 1 (complete novice) to 4 (experienced computer "hacker"). The scale down the left side is your own measure of how complex your bird-listing needs are and how serious you are about birding from 1 ("I just want a simple life list") to 4 ("I want to keep many lists about everything I see").

For instance, I would give myself a 4 on the computer scale and a 3 on the listing needs scale. I am willing to pay more for a more powerful program. The individual reviews that follow are written from this perspective.

Name: DATAHAWK (1.0)
Publisher: Turnstone Software
Address: 1838 Barry Ave., Suite 12, Los Angeles, CA 90025
PC Requirements: DOS 2.1 or+, one floppy and 1 hard drive, 512K RAM
Cost: 3 $69.00 + $4.00 SH
Ease of Use: 3
Basic Functions: 5
Power: 5
Design: 5 detailed manual with useful suggestions on organizing data
Overall Score: 21

DataHawk is probably the best choice for most birders. This is the program I would choose for my own needs. DataHawk has a complete manual with good suggestions on how to approach the task of initializing your personal database. It allows you to work from a list of birds in proper taxonomic sequence, customized to meet your particular needs (e.g. all of North America, lower 48 only, selected states only). It allows you to set default values to avoid repetitious data entry for several fields. Its search facility is very smooth. DataHawk is very good at updating multiple lists. For example, if you enter sightings for a particular trip, it will automatically update any other lists that might be relevant (e.g. state lists, year list, county list, special list).

There are only a few minor problems. A bell rings every time you enter a life bird. If you are entering your life sightings for the first time at night, you may have an upset spouse. I would like to see all bird listing programs display the Latin name and American Ornithologists' Union number on each species screen. DataHawk does not do this, but few of the other programs do either. I would like to see menu options for importing and exporting data in all bird listing programs. DataHawk does not have such options.

Version 2.0 should be available soon. I had the opportunity to preview Version 2.0 and it expands the capability of DataHawk, increases the speed, and reduces the amount of disk space required to run it. Overall DataHawk is an excellent program.

Name: AVES
Publisher: EcoSystem Software
Address: 638 El Dorado Ave., Oakland, CA 94611
PC Requirements: DOS 2.0 or+, two floppy or 1 hard drive, 256K RAM, Graphics
Cost: 3 $65.00 + $3.00 SH
Ease of Use: 5 novice will learn quickly
Basic Functions: 3 uses four letter name code
Power: 3 good treatment of American Ornithologists' Union taxonomy, habitats
Design: 5 nice range map and field guide reference features, use of color
Overall Score: 19

Aves has the nicest design of any of the programs. It includes information that the other programs do not such as Latin names, habitat information, range maps, and references to field guide page numbers. Aves is easy to install and use and has a good manual. Aves allows searches by the four-letter codes used by bird banders (e.g. GLIB for Glossy Ibis). Aves is a good choice for a novice computer user or a novice birder. The design also means that your computer must be equipped with graphics capability and preferably with a color monitor. Aves is not a power program for handling multiple lists. Aves does not lend itself to importing and exporting data.

Name: PLOVER (4.0)
Publisher: Sandpiper Software
Address: 9 Goldfinch Court, Novato, CA 94947
PC Requirements: DOS 2.0 or+, one floppy or 1 hard drive, 320K RAM
Cost: 3 $65.00 + $3.00 SH
Ease of Use: 3 not copy protected, will take novice time to learn
Basic Functions: 4 uses four-letter codes, flexible searching and sorting
Power: 5 databases files can be imported/exported, on menus, in manual
Design: 3 clean, logical, complex
Overall Score: 18

Plover is the most powerful program in this group for the experienced computer user. It allows the user considerable control in searching, sorting, and selecting records. dBASE III and IV users will feel right at home. Plover allows the import and export of data files. Plover not only uses the four-letter bird banding codes, it can also generate them for data you have imported. Plover supplies some limited statistical functions and if you understand

computers well enough you could export your Plover files to a spreadsheet or dBASE IV and get into some serious statistical work. The Plover manual covers all these subjects. Because it is powerful, it will take more time to learn to use Plover and many of its capabilities may not be needed by the novice birder or computer user. I offer these comments as an observation rather than a criticism. Plover is a good program.

Name: BirdBase 2 (1991 Update)
Publisher: Santa Barbara Software Products, Inc.
Address: 1400 Dover Road, Santa Barbara, CA 93103
PC Requirements: DOS 2.0 or+, three floppy or 1 hard drive, 256K (640K for world)
Cost: 3 (US) $65.00 + $3.00 SH
2 (World) $99.95 + $5.00 SH
Ease of Use: 3 copy-protected, requires key disk, good name search.
Basic Functions: 4 good at updating multiple lists (e.g. life, state, yard)
Power: 3 world-list capability, but more expensive
Design: 4 clean, logical, simple
Overall Score: 17 (US) 16 (World)

BirdBase 2 is a good program for keeping multiple lists. It is easy to learn and has a very good search facility which will accept any part or all of a species' name. As is true of other programs, BirdBase has utilities for addressing the problems of species splitting and lumping. Bird Base has a good manual and tutorial. BirdBase is the only program which offers the ability to deal with birds of the world rather than just North America. It is unfortunate that this ability costs extra. My major problem with BirdBase is that it is copy-protected and requires a key disk to function. This is annoying all the time, but it is critical if your key disk becomes damaged. Major software companies like Ashton-Tate and Lotus abandoned this scheme some time ago because of user complaints. If the program were not copy-protected and the world list were included in the base price I would give this program an overall score of 19.

Name: BIRDSTAR
Publisher: LJB Expert Systems
Address: 96 Craig Drive, Kitchener, Ontario, Canada, N2B 2J3
PC Requirements: DOS 2.0 or+, one floppy or 1 hard drive, 320K RAM
Cost: 4 $39.95
Ease of Use: 3 not copy-protected, intuitive but no manual or help
Basic Functions: 2 no built-in species names or sorting codes
Power: 3 databases files could be imported/exported, but not on menus
Design: 3 Clean, logical, limited
Overall Score: 15

BirdStar is an adequate program for simple listing. It is possible to make it more powerful if you have some computer experience and knowledge of dBASE III+. For example, I imported a text file of species names into the BirdStar master file so I wouldn't have to type in each name myself and possibly make a typing mistake. The design is simple and clean. There is no real manual provided. You can search by date, species, place or family. The "families," however, are described not by standard taxonomic classification but by headings like "long-legged waders," and "ducks." Some families are missing from these vernacular groupings. If your needs are simple, and the publisher is still offering the introductory sale price of $19.95, this program would not be a bad investment as an introduction to computerized bird listing. I like the open attitude of the publishers and expect that this will evolve into a more complete program in the future.

Name: FLEXI-LIST (2.2a)
Publisher: Parkway Software
Address: P.O. Box 275, Villanova, PA 19085
PC Requirements: DOS 2.0 or+, one floppy or hard drive, 256K RAM
Cost: 3 $50.00 + $3.00 SH
Ease of Use: 1 data entry very awkward
Basic Functions: 2 uses four-letter name code
Power: 1
Design: 1
Overall Score: 8

FLEXI-LIST includes a file of species names sorted in American Ornithologists' Union order and four-letter bird bander codes. The design is based on the assumption that this be used as a base for creating your own customized lists. This is a sound idea; however, you could just as well spend your time learning a canned program like dBASE IV or LOTUS and develop your own files from scratch. The file creation and bird addition functions are very awkward and would leave a novice quite lost.

ED MAIR *is founder and president of the Newburyport Birders' Exchange, an association of birdwatchers who use personal computers. He is the author of* A Field Guide to Personal Computers for Bird Watchers *(Prentice-Hall, 1985).*

NEW HI (& LO) TECH BIRDING STUFF

by Malcolm Abrams

SONGFINDER

IF IT'S TRUE THAT THE AVERAGE AGE of the American birder is 47, then the average birder has already, or will very soon, suffer moderate hearing loss in the upper frequency range. By age 60, moderate loss or worse is the norm.

Chances are you will still hear dinner party conversations, the dentist's drill, and the blast of traffic. But what you won't hear are the breathtaking sonata of a Winter Wren, the buzzing trills of the Cedar