A Progress Report

AGNPS Newsletter

Winter 1995

We are pleased to announce the fifth anniversary of the AGNPS newsletter! Five years ago, the newsletter announced the completion of the new graphical output display available in version 3.51. Today we have such features as GIS capability, Source Accounting, and are moving toward the next generation of Continuous simulation AGNPS. We hope this newsletter has met its objectives of informing AGNPS users of current and new developments on the model over the past five years. We appreciate your comments and suggestions concerning both the model and the newsletter.

AGNPS Version 4.03

AGNPS version 4.03 has now been released as an upgrade to it's predecessor which was version 4.02. There have been several minor cosmetic changes to the previous version as well as the completed Source Accounting module. Source Accounting is a new addition to AGNPS which allows the user to see the various sources of pollution in any given cell. The user selects the cell that they want to view and the type of pollution they want to monitor. The software then gives a summary of which cells the pollution is coming from. Output is available for sediment, nutrient, residue, and hydrology information. This is a powerful feature and we are very happy to offer it to our users.

The AGNPS (Agricultural NonPoint Source) computer model was developed by the Agricultural Research Service (ARS) in cooperation with the Minnesota Pollution Control Agency (MPCA) and the Soil Conservation Service (SCS). The model was developed to analyze and provide estimates of runoff water quality from agricultural watersheds, simulating runoff, sediment and nutrient transport.

The cosmetic changes made deal with data format issues. For instance, the SCS curve number has been changed from an integer to a floating point number. In gathering requirements from our last newsletter, several users requested this change be made--so we did. Another change was modifying the precision of overland manning's coefficient. Due to screen size restrictions, the spreadsheet display only allows values to the thousandths. However, up to six decimal places are now stored and used for the model. Those of you who have been using version 4.02 need not worry because the 4.02 files will be read by the 4.03 spreadsheet. The upgrade will be transparent to the data files.

Here is a list of the known problems which have been encountered since the release of the AGNPS version 4.03 program:

1.) Cell number is an integer. This has never been a problem in the past. However, the range of the integer value on our compiler is 2 bytes. This means that it can cover a range of -32767 to 32767. In the past, we have made claims that the maximum number of cells that AGNPS can handle is limited only by the machine's memory size. Now, with this problem being revealed we see that there is a logical maximum of 32766 cells in any watershed. As hardware size and speed increase, so does the size of watersheds being simulated. For now, we don't expect this limitation to effect many users. We will correct this problem in the Annualized AGNPS model design. For those of you with large watershed greater than 32766 cells, we suggest that you contact us through internet and we will offer suggestions of how to get around this bug.

2.) For those of you receiving the AGNPS 4.03 program diskettes through the mail, you will encounter an error message when viewing the graphics output of our sample files which were sent with the program. The message will warn you that the files are in the incorrect format and cannot be viewed. This is because the files that were sent along with the program diskettes such as AGW7.DAT and BEAVER.DAT were in version 4.02 format. To solve this problem, simply load the data sets into the spreadsheet editor before viewing graphics display. Once the file is loaded, press <F5> to save the file. This will put the files into the correct 4.03 format and allow normal viewing of graphics and tabular output interfaces.

3.) Several questions have come in regarding the check data module. Versions of AGNPS prior to 4.0 have allowed various features to view cell aspects in the Check program. Version 4.0 was rewritten in the C programming language to be more compatible with our memory manager software. In the new version, it was decided to stick to only error reporting and not show routing output. Questions received indicate that this is considered a bug when, in fact, it was a design decision.

4.) A new problem has risen when printing out the graphics display to a Hewlett Packard Laserjet printer. The program will jump back to the spreadsheet from graphics if outputting a watershed to an HP Laser device. If you encounter such a problem in version 4.03, you may do one of two things:

- Change your output device to another style of printer or plotter by selecting in the menu.
- Write your graphical output to a *.HPG file by selecting the FILE output device in graphics.

If you choose the second method, you may need to remove any AGNPS "whole watershed grid variables" that you may be using. This is because the grid variables tend to cover up the graphic and the watershed turns black. The *.HPG file can be easily imported into other applications such as CorelDraw and even Word Perfect version 6.0 and above. This way, you will be able to get a hard copy of your watershed. At this time, HP Laserjets are the only known printer affected by this bug.

User Support Issues

In the past several years, USDA-ARS Morris, MN has provided virtually unlimited technical support of the AGNPS program at no charge. Due to the expanded user domain and the random nature of answering telephone calls, user support is the primary hinderance in developing new technology. As a research agency, it is our job to develop new science rather than spend time with consumer related tasks. Several changes have recently taken place in the management of the AGNPS project which are directing us to rework the current AGNPS support policy. We are currently working with SCS to complete our commitments with the Annualized AGNPS model. At this time, we are evaluating how much time and resources this commitment will require. However, one thing is certain; we are unable to spend as much time and money as we have in the past working on support. Currently, there is only one programmer working on the software portion of the entire project. His time is spread very thin between support, testing, design and the evaluation of Annualized AGNPS. Until the evaluation of the project and resources are defined, we will put our support of version 4.03 on hold. Those who have contacted us before December 15, 1994 will be helped as soon as time allows. In the meantime, we will work on a support policy that is acceptable to both ARS, SCS, and AGNPS users. Any suggestions you may have in helping us answer the support questions are appreciated greatly. Please keep in mind that resources are shrinking and we need suggestions as to how to pay for support as well. Some ideas include: 1-900 number or an annual support fee. Are you willing to pay for support? We need to know. A user support survey is printed at the end of this newsletter. Please take the time and send it back to us to aid in this process. Any comments you have about support or other aspects of the program are greatly appreciated -- good or bad.

We are sorry for your inconvenience during this planning phase. We hope to come to a swift solution to this problem which will benefit all parties. If you have a problem with 4.03, do the following:

- thoroughly read manuals and newsletters
- study the ERROR.LOG file (if it exists)
- become familiar with the memory configuration of your computer

As a last resort, you may send an Email message to our support address listed later in this newsletter. In your message, please describe the error thoroughly as well as your hardware and software configuration. Including the CHKSYS.AGN file, which is in your system directory, is recommended.

Other AGNPS Developments

As the time demands of version 4.03 decrease, we are now focussing completely on the Annualized AGNPS Model. We are now assessing AGNPS commitments and relating these commitments to our current resources. These relations are then labeled as tasks. Once the tasks are defined and properly assigned we will begin the design process. It has been decided that all attention will focus on the annualized model itself. There will be no input or output interface built for the program until the actual model has been completed and thoroughly validated and tested. By completely re-designing the AGNPS model following software engineering principles, we expect to achieve a higher level of quality in the model from documentation to run time to maintainability.

The Annualized AGNPS model will contain the features of Single-Event version 4.03 except on a continuous simulation basis. Some features will obviously need to be added in order to make it continuous. Such features will include cropping management practices and a winter simulation module. As mentioned already, it is important that the model be completely portable between DOS and UNIX environments.

Personnel

As we continue through this changing process, personnel continues to evolve in the Bullpen. Mike Koehler accepted a position as Information Systems Manager for a private company earlier this fall. We wish Mike the best of luck in his new position. Judy Dehne has been hired by the lab as a clerical secretary and will help us with our transition. She and Jim Eklund have been very busy working with our documentation and task tracking. As far as software development, Fred Theurer and Sam Alessi are now involved in managing AGNPS development. Sam is experienced in software and systems engineering through his work with the USDA-ARS FARMBOOK project. Fred is with SCS and has worked with software development for several years. While their services are on a part-time basis, we look forward to implementing their expertise in developing Annualized AGNPS. In the Bullpen, John Witte is currently working on the Annualized model design starting with the decomposition and assessment of the current technology. Kevin Baker is new in the Bullpen and will spend his time between now and next June working on verification and testing of the AGNPS science. The future promises continued change in roles and resources as the project continues. We are facing these changes with a positive attitude knowing that a commitment to qualified personnel will enhance the quality of the finished product.

Internet / BBS Status

We are finally in touch with the rest of the world! Our internet connection has been up and running for several months now. As the reliability of our connection has increased, we are now encouraging all correspondence to the Bullpen be done through internet. We have also added an anonymous FTP user login to our location. The address of this site is *soils.mrsars.usda.gov*. To use this account, just type *ftp soils.mrsars.usda.gov*. You will then come to the login prompt for our workstation in the Bullpen. As you login to this address, type in *anonymous* when asked for your username. This will be followed with a prompt for your password. At the password prompt, type in your complete internet address. Using this account, you will be able to *put* and *get* AGNPS related material without going through the support lines. Currently, when logging in as anonymous, you are put into the */pub* directory.

From there you may change directory (*cd*) to the *agnps* directory. This directory is currently unorganized. However, as time allows Judy and Jim will organize the information on this account in such a way that will be easy to browse and understand. Information on this account will include the latest version of the entire AGNPS program, newsletters, current mailings, AGNPS documentation, and current progress reports of work being done with the Annualized model.

Due to security and lack of interest, the bulletin board system has been temporarily disabled. If this is a problem for any of our users, please contact our support personnel and we will try to get things worked out for you. Our Email addresses are as follows...

AGNPS support questions & comments --
AGNPS_Support@mail.mrsars.usda.gov

Annualized requirements --
AGNPS_Req@mail.mrsars.usda.gov

Acknowledgements

The AGNPS Newsletter is a cooperative effort supported by various agencies, including the USDA Soil Conservation Service (SCS), the Minnesota Pollution Control Agency (MPCA), the Legislative Commission on Minnesota Resources (LCMR) and the Environmental Protection Agency (EPA). The editors of this edition of the newsletter are John Witte, Jim Eklund and Sam Alessi. The intent of this newsletter is to inform non-AGNPS users of the AGNPS program and to keep current users of AGNPS abreast of current developments and facilitate use of the model.

-------------User Survey----------------

1.) If you were managing AGNPS, where would you spend most of your time?

Training, support, manuals
New features
SCS version for official use
Stand alone Windows version

2.) Do you feel ARS should support its software in the same way commercial businesses do?

If yes, do you have some suggestions on how to change ARS policy or fund such an endeavor?

3.) Would you pay for support? If so, how much?

4.) How do you rate the overall quality of the current AGNPS 4.03? (1-bad, ... 10-best)

5.) What is AGNPS three best attributes?

6.) What is AGNPS three worst attributes?

7.) What do you feel you have been promised?
By what date?