

Standard Operating Procedure 17: Data Entry, Editing, and Verification, version 1.0

Summary:

The Shenandoah National Park (SHEN) Aquatic Macroinvertebrate data entry program (also known as AQIN) is implemented in two phases. First, after the field work is completed the field crew, water chemistry, flow, and habitat information can be entered into the data entry application located on the park network. The second phase takes place months later once the aquatic invertebrate sample has been sorted and identified by the contract lab. That information is entered by the lab into a standalone data entry application that is returned to the park with the sampled invertebrates and incorporated into the master database.

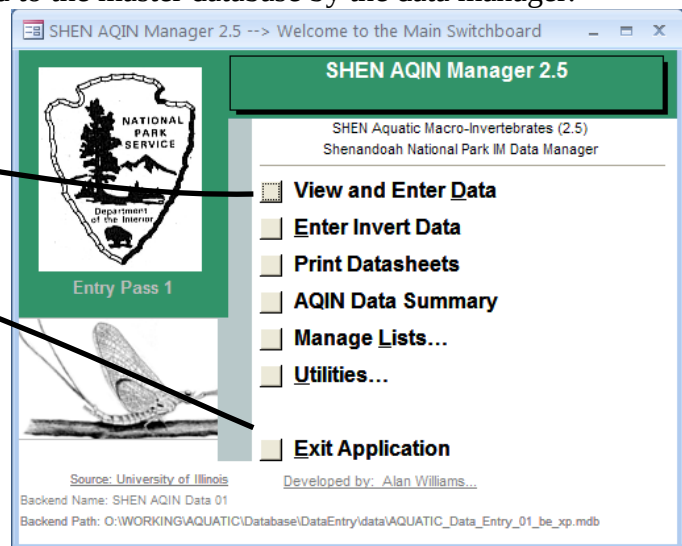
Phase one data entry (physical stream characteristics) – This phase consists of three main components, the data entry application, the temporary storage databases, and the master database. Data is entered into the first temporary database using the data entry application. Then to help ensure data have been accurately transcribed the data are entered again into a second temporary database. The two temporary databases are compared and any discrepancies can be reviewed and fixed. At the end of the field season the data in the temporary databases are reviewed by the program staff and then added to the master database by the data manager.

1) Overview:

To start data entry press
<View or Enter Data>

To quit press
<Exit Application>

The other buttons are used by the data
or program managers



2) **The main data entry screen** has basic date and location information at the top, followed by a series of tabs with different types of data on each tab.

To enter data for a new date and site press the <Add New> button.

To search for data that has already been entered use the pull down list.

You can also use the navigation buttons at the bottom of the form to move between records.

Data is automatically saved as you go, row by row, so there is no need to save manually.

3) **Water Chemistry:** fill in the information for each of the fields from the data sheet.

4) **Crew:** Select the members of the crew that were present from the right side (A) then press the “move” button (B). If you need to add someone to the list use the “Edit...” button (C).

5) Discharge:

Enter the stream width and the interval that was selected.

Then press the <Add Stream...> button and the CX and Dist data should be filled in by the computer.

After that data is confirmed enter in the depth and velocity for each distance.

CX	Dist	Dep	Vel	Notes	Flag
1-00	0.00	0.00	0.00		
1-01	0.10	0.16	0.37		
1-02	0.20	0.17	0.36		
1-03	0.30	0.12	0.24		
1-04	0.40	0.07	0.27		
1-05	0.50	0.14	0.23		
1-06	0.60	0.10	0.26		
1-07	0.70	0.06	0.19		
1-08	0.80	0.10	0.16		
1-09	0.90	0.11	0.15		
1-10	1.00	0.06	0.35		
1-11	1.10	0.10	0.21		

6) Habitat:

Enter the total length of the transect.

Then press the <Add Stream...> button and the CX data should be filled in by the computer.

After the distances for each CX are auto loaded enter the data for each of the CX.

Once the stream width is entered for each row then press the <Add Distances...> button to create the substrate records for the selected CX.

C	Cov	Ty	D	F	Wid	G	Notes
0	3	T			3.9	8	
10	3	T	3	2	2.8	1	
20	3	T	3	2	1.9	1	
30	2	T	3	2	2.8	14	
40	3	T	3	2	2.7	2.4	11
50	3	T	2	1	2.8	3.5	12
60	3	T	2	1	3.7	3.6	13
70	3	T	2	2	4.6	2.3	16

Dist	Depth_r	Substrat
0.0	0.00	B
0.3	0.23	O
0.6	0.15	PG
0.9	0.02	PG
1.0	0.00	C
*		

Scroll through the CX records on the left to verify depth and substrate records were created for each.

7) Notes:

If there are generic notes about that day at that site including, data collection, equipment problems, water level, signage etc., enter it in the space provided on the “Site Info and Notes Tab”.

8) Second pass data entry:

Follow the same basic procedures for entering data during both data entry passes.

The main differences on the 2nd pass are:

- The form will be yellow indicating a 2nd pass.
- You will not be entering the Date or site data again, rather you will be choosing from the list of already entered dates and sites.
- Once you have completed entering all of the data for a site press the <Check> button to compare it to the first pass.

9) **Checking** the 1st and 2nd data entry pass:

After pressing the <Check> button (see above) wait a moment and this form will appear.

Table_Name	In1	NotIn2	In
R_SiteVisits_Crew	1		0

Table_Name	Conflicts
A_WQSiteVisits_Water_Chemistry	1

At the top should show the date and site it is checking.

If there are any listings in the 2) or 3) areas then each of those tables will need to be fixed. To fix a table select the table name and press the button below or just double click the table name.

10) **Un-Matched Records:**

Each table will have a custom form. Check the records in question against the data sheets. Either keep or delete each one.

Records in 1 but not in 2 Records in 2 but not in 1

SiteVisit_ID: 2003-12-12-1F003_1
Crew: Sager, Scott

Record: 1 of 1 Record: 1 of 4

1 Keep Record 1 Delete 2 Keep Record 2 Delete

11) **Resolve Errors:**

Each table will have a custom form. Yellow fields will indicate the problem data. Check the records in question against the data sheets. Keep either the record from the 1st or 2nd pass.

When you have fixed all of the problems the form should close returning you to the “**Checking**” form. Fix all of the tables then press <Done>.

Existing Record Database 1 Conflict Record Database 2

SiteVisit_ID: 2003-12-12-1F003_1 2003-12-12-1F003_1

Sampler: hyd1 hyd1

Time: 12:02 12:30

Temp: 0.00 1.00

DO: 0.00 0.00

Cond: 0.00 0.00

pH: 0.00 0.00

TDS:

Notes:

WaterLevel:

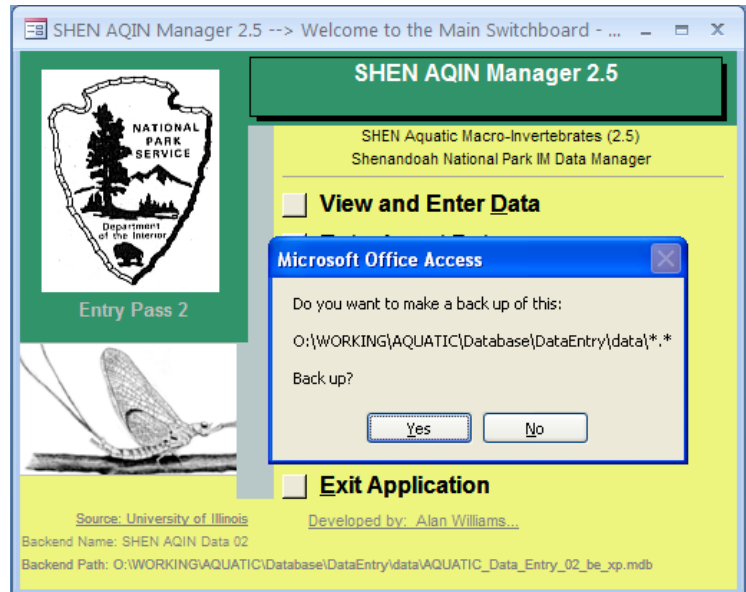
WaterColor:

Keep 1 Keep 2

Record: 1 of 1

11) Exiting and Backing up:

When you are done entering data for that day you should return to the Switchboard by closing the data entry form using the <Done> button. Then press the <Exit Application> button. You will be asked if you want to make a backup of a file, press <Yes>. This zips up a copy of the data for back-up.



For help contact the data manager:
Phone: 540-999-3500 x3431

Phase two data entry (macro invertebrates) – This phase consists of a spreadsheet template used by the contractor to provide data to the program manager. The template will contain at a minimum the collection information provided with the samples, taxonomic identification information and counts of each. When the data entry is complete the data file is returned with the sorted samples and the data are reviewed by the SHEN program staff and then added to the SHEN master AQIN database.

SOP Revision History

All protocols, regardless of how sound they are originally, require modification as new and different information becomes available. SOP version numbers increase incrementally by tenths (e.g. version 1.1, version 1.2...etc.) for minor changes. Major revisions should be designated with the next whole number (e.g., version 2.0, 3.0, 4.0 ...). Small changes or additions to existing methods will be reviewed in-house by Shenandoah or Mid-Atlantic Network staff. However, if a complete change in methods is sought, an outside review is required.

Revision History Log:

Prev. Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #