

**Louisiana Department of Natural Resources
Strategic Online Natural Resources Information System
*SONRIS 2000***

**Coastal Restoration Division
Biological Database**

**USER'S MANUAL FOR
HYDROGRAPHIC AND EMERGENT
VEGETATION DATA MANAGEMENT**



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INTRODUCTION

This document contains a short set of instructions for loading both continuous and discrete hydrographic data and emergent vegetation data into the Strategic Online Natural Resources Information System (SONRIS 2000) database of the Louisiana Department of Natural Resources. Instructions for data preparation of both continuous and discrete hydrographic data Excel files, as well as instructions for QA/QC verification and data retrieval of emergent vegetation data files, are also included. These instructions guide the user through the steps of loading, verifying, and retrieving data with respect to the SONRIS database, and are also meant to assist in troubleshooting any problems that may occur.

I. HYDROGRAPHIC DATA

A. Continuous Hydrographic Data

1. Data Preparation and Format for Loading

- 1) Open data file (*.xls) in Excel.
- 2) Delete the first column of data containing the station number and the last column of data containing marsh elevation to datum.
- 3) Check to make sure that the remaining column headings are in the following format and units:

Date	Time	Raw Water Temp.	Adjusted Water Temp.	Raw Sp. Cond.	Adjusted Sp. Cond.	Raw Salinity	Adjusted Salinity	Raw Water Level	Adjusted Water Level	Raw Water Elev. To Marsh	Adjusted Water Elev. To Marsh	Raw Water Elev. To Datum	Adjusted Water Elev. To Datum	Raw Battery	Adjusted Battery
(mm/dd/yyyy)	(hh:mm:ss)	(°C)	(°C)	(µS/cm)	(µS/cm)	(ppt)	(ppt)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(v)	(v)

- 4) Delete the first two rows of the spreadsheet containing the column headings.
- 5) Delete any other data in the spreadsheet beyond column P (e.g., completeness summaries).
- 6) Save the file as a comma delimited file (*.csv) with the same name, but with all spaces deleted. Choose “OK” when asked to save only the active sheet.
- 7) Open the F:\Users\Bms_das\SONRIS\qaqc_macro.txt file using WordPerfect or WordPad, copy text, and close file.
- 8) After any errors have been corrected, save and close the file, but when closing the file, choose the “NO” option when asked to save file in Excel format. The file should still be in *.csv format.

2. Data Loading

- 1) Copy the *.csv data file to the “BMS_DATA” folder on the “O:\” drive.
- 2) Open SONRIS and choose the Coastal (Biological Monitoring) tab.
- 3) From the menu bar, choose Enter Data, then choose Historical Continuous.
- 4) Enter station number for data file to be loaded into the “Station ID” field.
- 5) Into the “Load File Name and Directory” field, enter the *.csv data file name exactly as it is in the “BMS_DATA” folder in the “O:\” drive (include *.csv extension).
- 6) Select “Load Data”. The load should take approximately 2 -5 minutes. Once the load has finished, use the pre-save inspection screen to check several data records and the total number of records loaded against the original *.csv file for accuracy.
- 7) If any errors are found, select “Back” to return to the Data Input screen. Minimize or put aside the entire SONRIS window and open your original *.csv file containing the data, find any errors, correct them, re-save the file, and re-attempt to load the file as described above. If your *.csv file contains no errors, but the SONRIS pre-save inspection screen shows errors or discrepancies from your original file, contact the RTS Database Unit in Baton Rouge (Ed Haywood et al).

I. HYDROGRAPHIC DATA

A. Continuous Hydrographic Data

2. Data Loading (cont'd)

NOTE: if SONRIS gives you an error message explicitly stating that there is an error in your data (and that prevents the program from allowing your data from being loaded), go back to your excel .csv spreadsheet file and follow the directions for using the “QA/QC macro” found in the troubleshooting section of this manual (page 7).

8) If no errors are found, select Save Data. The Save process should take 2-5 minutes, and your PC should be able to perform other functions during this process. A message indicating the total number of records saved to the database will appear when the save has been completed; confirm that the total is correct.

9) Once the save has been completed, perform a Data Retrieve for the data that was just loaded (see Data Retrieval below). Check several data records and the total number of records loaded against the original *.csv file for accuracy.

10) Delete the *.csv data file from the “BMS_DATA” folder on the “O:\” drive.

3. Data Retrieval

1) Open SONRIS and choose the Coastal (Biological Monitoring) tab.

2) From the menu bar, choose Retrieve Data, then choose Continuous and DCP.

3) If you are retrieving data from just one station, enter the station ID in the “Station ID” field. If you are retrieving data from all stations in a project, then leave the “Station ID” field empty and enter the project ID into the “Project ID” field.

4) Enter the start date, start time, end date, and end time of the period for which you want data into the respective date/time fields.

5) Select the method by which you would like to retrieve your data set:

- selecting “Download with preview” will open a preview screen displaying your data request results, and will allow you to perform an immediate on-screen download of your data in the form of a comma-delimited excel file.

- selecting “Download via e-mail” will cause your requested data sets to be downloaded to the DNR public FTP site, and you will soon receive an e-mail directing you to your data.

Note: if your data request is for a date/time range greater than one year, SONRIS will allow you to perform the request only by using the “Download via e-mail” method.

I. HYDROGRAPHIC DATA

B. Discrete Hydrographic Data

1. Data Preparation and Format for Loading

- 1) Open data file (*.xls) in Excel.
- 2) Check to make sure that the column headings are in the following format and units:

Station	Date		Time		Staff Gauge	Depth	Bottom Water Temp.	Surface Water Temp.	Bottom Sp.Cond.	Surface Sp.Cond.	Bottom Salinity	Surface Salinity
	(mm/dd/yyyy)		(hh:mm)		(ft)	(ft)	(°C)	(°C)	(μS/cm)	(μS/cm)	(ppt)	(ppt)
Bottom DO	Surface DO	Bottom pH	Surface pH	Bottom Velocity	Surface Velocity	Secchi	Fecal Coliform					
(mg/L)	(mg/L)			(ft/s)	(ft/s)	(ft)	(MPN/100ml)					

- 3) Save the file as a comma delimited file (*.csv) with the same name. Choose “OK” when asked to save only the active sheet.
- 4) Check the file for duplicate data associated with calibrations and multiple measurements.
- 5) Check to make sure all the letters in station column are in CAPS.
- 6) Make sure all entries have a time. If there is no time, then enter 01:01
- 7) Delete the headers.
- 8) After any errors have been corrected, save and close the file, but when closing the file, choose the “NO” option when asked to save file in Excel format. The file should still be in *.csv format.
- 9) It might be wise at this point to perform a data retrieve for the time period and project to be entered to see if there are any data currently in SONRIS. If data are present, a message will appear during the Load / Save Data process indicating that duplicate data were found. By choosing “OK” when this message appears, the data already present in the database will be replaced by the new data.

2. Data Loading

- 1) Copy the *.csv file to the “BMS_DATA” folder on the “O:\” drive.
- 2) Open SONRIS and choose the Coastal (Biological Monitoring) tab.
- 3) From the menu bar, choose Enter Data, then choose Historical Discrete.
- 4) Enter the *.csv data file name exactly as it is in the “BMS_DATA” folder on the “O:\” drive (include *.csv extension).
- 5) Select Load Data. The load should take less than 1 minute. Once the load has finished, check several data records and the total number of records loaded against the original *.csv file for accuracy.

I. HYDROGRAPHIC DATA

B. Discrete Hydrographic Data

2. Data Loading (cont'd)

NOTE: if SONRIS gives you an error message explicitly stating that there is an error in your data (and that prevents the program from allowing your data from being loaded), go back to your excel .csv spreadsheet file and follow the directions for using the “QA/QC macro” found in the troubleshooting section of this manual (page 7).

- 6) If no errors are found, select Save Data. The Save process should take less than 2-5 minutes, and your PC should be able to perform other functions during this process. A message indicating the total number of records saved to the database will appear when the save has been completed; confirm that the total is correct.
- 7) Once the save has been completed, perform a data retrieve for the data that was just loaded (see Data Retrieval below). Check several data records and the total number of records loaded against the original *.csv file for accuracy.
- 8) Delete the *.csv data file from the “BMS_DATA” folder on the “O:\” drive.

NOTE: SONRIS will not allow two data files to be loaded into the same station at one time. For example, you can't load a station's 1998 data at the same time that you load it's 1999 data (unless included in the same file) because the database will try to load both sets to the same observation point. Since the database can only recognize one set of data at a time, neither set will be loaded.

3. Data Retrieval

- 1) Open SONRIS and choose the Coastal (Biological Monitoring) tab.
- 2) From the menu bar, choose Retrieve Data, then choose Discrete..
- 3) If you are retrieving data from just one station, enter the station ID in the “Station ID” field. If you are retrieving data from all stations in a project, then leave the “Station ID” field empty and enter the project ID into the “Project ID” field.
- 4) Enter the start date and end date of the period for which you want data into the appropriate fields.
- 5) Select the method by which you would like to retrieve your data set:
 - selecting “Download with preview” will open a preview screen displaying your data request results, and will allow you to perform an immediate on-screen download of your data in the form of a comma-delimited excel file .
 - selecting “Download via e-mail” will cause your requested data sets to be downloaded to the DNR public FTP site, and you will soon receive an e-mail directing you to your data.

I. HYDROGRAPHIC DATA

C. Supplement

1. Troubleshooting

Error Message	Possible Problem and/or Solution.
ORA-02290: check constraint (.) violated	A parameter may be out of the normal expected range. Eg. Temp. of 2385 instead of 23.85
unexpected dbmserrcode-1403-ORA-01403: no data found	
ORA-1555: snapshot too old: rollback segment number with name ""too small	
Duplicate observation points detected for "station ID". Contact IT to correct.	Two sets of data are to being loaded for the same station by two different people at the same time.
<u>File Download Pop-Up</u> : When trying to load a file into SONRIS you may receive this error if the file you are trying to load is not in the O:\ drive	Check the file for errors and make sure the file was copied to the "O:\\" drive (if not do so) you may also have typed the file name incorrectly in the load bar. Also, the database software may not be communicating with the "O:\\" drive (this is a Helpdesk problem).
2662 records saved: Please call programmers to clean up sheets added with no data.	When historic discrete data is being loaded, a "sheet" (parent) must be created before the discrete details (children) can be created. Sometimes these sheets are not needed, as is the case with duplicate data. Unfortunately, this cannot be known until after the unnecessary sheet has been created. This error message is just a safeguard to get a programmer to make the check manually.
"ORA-01830: date format picture ends before converting entire input string."	This error means that either the date or time formats are incorrect for the type of data you are loading. Check the format and try loading again.
No records saved! ERROR: Main: ORA-01840: Input value not long enough for date format	This error means that a date is present with no time value. Some other data/time problems may cause this error as well.
"ORA-01400: ..."	Use the QA/QC macro (page 7) to find and correct an error that went unnoticed in your data file

I. HYDROGRAPHIC DATA

C. Supplement

1. Troubleshooting (cont'd)

Using the QA/QC macro to find errors in hydrographic data spreadsheets:

- 1) Go back to your *.csv data file in Excel and from the menu bar select Tools, then Macro, then Macros.
- 2) Choose a name for the macro, then click Create. Make sure to choose a name that is gibberish or that cannot be misread by Excel; e.g. do not name the macro "P15", because when you then try to execute the macro, Excel will simply highlight cell p-15 and do nothing more.
- 3) Press Enter, then press the up arrow key, then "right click" and choose "Paste" (the text from the qaqc_macro.txt file copied in Step 7 should be present).
- 4) Go to the menu bar and select File and then choose Close and Return to Microsoft Excel.
- 5) In the *.csv file in Excel, highlight all data and sort by column A (date) then by column B (time) to separate out any yearly data that doesn't belong (ex. 1998 data in a 1999 file).
- 6) From the menu bar, select Tools, then Macro, then Macros. Be sure the macro that was just created is highlighted and select Run. (The Macro will take approximately 2-3 minutes to run and will outline all cells in the columns as it runs).
- 7) After the Macro has finished a message will appear indicating if any errors were found followed by a message indicating that the macro is complete.
- 8) If the Macro found any errors, they will be highlighted in red. Either correct the errors or, if the highlighted cells appear empty and are at the end of the spreadsheet, simply delete the highlighted cells
- 9) After any errors have been corrected, save and close the file, but when closing the file, choose the "NO" option when asked to save file in Excel format. The file should still be in *.csv format
- 10) Return to SONRIS and load your now-corrected data as described in this manual.

I. HYDROGRAPHIC DATA

C. Supplement

2. Notes

II. EMERGENT VEGETATION DATA

A. Data Entry

- 1) Open SONRIS and choose the Coastal (Biological Monitoring) tab.
- 2) From the menu bar, choose Enter Data, then select Vegetation. This will bring you to the Data Entry screen. Use either the mouse or the tab key to move from field to field, and start at the Sample Type field.
- 3) Check the appropriate box for **Sample Type**.
- 4) Check the appropriate box for **Vegetation Type**.
- 5) Ignore the **Project** field, as it will auto-populate depending on what station you will enter into the Station field.
- 6) Enter the station number in the **Station** field, an entry is required. Pressing the F9 function key while the cursor is in the Station field, or trying to skip the field without entering a station number, will invoke the BMS Stations pick list, from which you can choose a station number. SONRIS will not allow a station to be entered into the Station field that is not on this pick list.
- 7) If there is any “group” information (the category on the field sheet that can be used to associate stations with each other) for the station, enter it into the **Group** field.
- 8) Enter the station plot size, in square meters, into the **Plot Size** field, an entry is required.
- 9) Enter the date of data collection, in the format mm/dd/yyyy, into the **Date** field, an entry is required.
- 10) To enter the names of personnel that collected the data, click on the **Personnel** tab, which will open the Personnel window. The F9 function key will invoke a pick list from which you can choose a name. When all personnel are entered, click on the Back tab, which will close the Personnel window and take you back to the Data Sheet.
- 11) Ignore the **Lat** and **Long** fields (for station coordinates), as they will auto-populate depending on what station you have entered into the Station field.
- 12) Enter the organization information into the **Organization** field by using the F9 function key to invoke the Organizations pick list, an entry is required. SONRIS will not allow an organization to be entered into the Organization field that is not on the pick list. The following organization names should be used for each respective field office:

Lafayette = “LA DEPT OF NAT RES (CRDL)”

New Orleans = “LA DEPT OF NAT RES (CRDNO)”

Thibodeaux = “LA DEPT OF NAT RES (CRDT)”

II. EMERGENT VEGETATION DATA

A. Data Entry (cont'd)

- 13) Enter the plant community type in the **Plant Community Type** field using the F9 pick list, an entry is required. If “Other” is chosen, then proceed to the **Plant Community Other** field, and enter the relevant information by typing directly into this field.
- 14) Enter the total percent cover for the plot into the **Total Percent Cover** field, if applicable, and then enter any cover values that are applicable for the **Tree, Shrub, Herbaceous,** and **Carpet** layer fields.
- 15) Enter the height (in cm) of the dominant plant species in the plot into the **Dominant Height** field, if applicable, and then enter any height values that are applicable for the **Tree, Shrub, Herbaceous,** and **Carpet** layer fields.
- 16) Enter the scientific name of each plant species found at the station into a **Scientific Name** field of the Species List section. The simplest way is to use the F9 key to invoke the Plants Species pick list, from which you can choose the correct USDA-approved complete scientific name. SONRIS will not allow a plant species to be entered that is not on the pick list. If the plant species has a USDA-approved common name, then the **Common Name** field will auto-populate. SONRIS will not allow you to enter a common name manually.
- 17) If applicable, enter the percent cover of the plant species into the **% Cover** field.
- 18) If you have filled in a percentage cover value for a plant species, the **B-B Rank** field will auto-populate with the corresponding Braun-Blanquet rank. SONRIS will not allow you to fill this field manually.
- 19) Enter whether a plant species was present either “in” or “out” (or “both”) of the station plot in the **IN/OUT** field. You can either type this in directly, or use the F9 function key pick list.
- 20) If applicable, enter the number of individual plants planted in a plot into the **Number Planted** field.
- 21) If applicable, enter the number of planted individual plants surviving in a plot into the **Number Alive** field.
- 22) If there is any additional information pertaining to a specific plant species found at the station, enter that information in the **Additional Species Description** field (e.g., Family name for a species listed as “Unknown”).
- 23) If there are any miscellaneous comments pertaining to the plot or to the monitoring station as a whole, enter them in the **Comments** field. Double-clicking on the field will open a Text Editor window.
- 24) When you have finished entering a Data Sheet, save the information by clicking on the floppy disc icon on the toolbar, or go to the menu bar and choose Action and then select Save. When Data Sheets are saved, they are saved to a temporary buffer space where they are accessible to QA/QC verification before being loaded into the actual database.
- 25) To enter information for another station, create a new Data Sheet by either selecting the “Next Record” button on the toolbar, or by using the down arrow while the cursor is in the Station Name field of the data sheet you just completed, or by selecting the + (“Insert Record”) button on the toolbar.

II. EMERGENT VEGETATION DATA

A. Data Entry (cont'd)

26) If you need to find a Data Sheet for a station that you already entered and saved, but that has not yet gone through the QA/QC verification steps below, select the “Enter Query” button on the toolbar (or the F7 function key), then either enter the name of the desired station into the “Station Name” field, or leave the field blank. Then select the “Execute Query” button on the toolbar (or the F8 function key). All Data Sheets for that station will be returned, and you can use the arrow keys or the “Page Up” and “Page Down” keys to scroll through them.

27) If you need to make changes or corrections to a Data Sheet that you’ve already entered and saved to the buffer space but that has not yet been committed to the actual database by the QA/QC Verification step referred to below, do the following. Using the “Remove Record” button (red X button) on the menu toolbar, delete the rows of information in the “Species List” portion of the Data Sheet, and then do a Save. Then go to the personnel window and use the Remove Record button to delete the rows of personnel names, following this with another Save. Return to the main portion of the Data Sheet and use the Remove Record button to delete the contents of the Organization Name field. This should cause all of the remaining information on the sheet to disappear. Save once more, and now the file is gone and can be re-entered with the correct information.

28) To exit the Data Sheet, click on the “exit door” button on the toolbar, or go to the menu bar and choose Action and then select Exit, or click on the “x” in the upper right hand corner of the Data Sheet.

B. QA/QC Verification

Note: The QA/QC verification process commits data from the temporary buffer space to the actual database.

- 1) From the menu bar choose QA/QC, then select Vegetation.
- 2) The Data Sheet is already in query mode, so enter a Station ID in the Station field (the F9 function key may be used to invoke the BMS Stations pick list).
- 3) After choosing a Station ID, select the “Execute Query” button on the toolbar (or use the F8 function key).
- 4) Confirm that all information is correct by performing standard QA/QC protocols for vegetation data. If all information on the Data Sheet is correct, then check the “Verified” box to verify the sheet. The username and the date of verification will auto-populate once the Data Sheet is verified. If the information shown on the Data Sheet is not correct, then do not verify the sheet. No changes are allowed to be made to the Data Sheet from the QA/QC screen. The Data Sheet is not officially verified until it is saved.
- 5) To save the verified Data Sheet, click the floppy disc icon on the toolbar, or go to the menu bar and choose Action and then select Save. This commits the verified data to the main SONRIS database. After verification, Data Sheets are no longer queryable in the QA/QC screen or in the Data Entry screen, as the data are now committed to the database. However, Data Sheets are queryable from the Reports screen (see Section C-2).

II. EMERGENT VEGETATION DATA

B. QA/QC Verification (cont'd)

6) To verify additional Data Sheets, select the “Enter Query” button on the toolbar (or use the F7 function key), then enter the desired station in the Station Name field (the F9 function key may be used to invoke the BMS Stations pick list). Then select the “Execute Query” button on the toolbar (or use the F8 function key), and view the results. Repeat the steps listed above for verification of any additional Data Sheets.

7) To exit the QA/QC screen, click on the “exit door” button on the toolbar, or go the menu bar and choose Action and then select Exit, or click on the “x” in the upper right hand corner of the Data Sheet.

C. Retrieving Data from SONRIS

1. Spreadsheet Retrieval

1) From the menu bar choose Retrieve Data and then select Vegetation.

2) Enter a Station ID or Project ID. The F9 function key may be used to invoke either the BMS Stations pick list or the Project State Number pick list.

3) The Start Date and End Date fields are used to describe the date range from which you are requesting data. These fields must be entered.

4) Select the method by which you would like to retrieve your data set:

- selecting “Download with preview” will open a preview screen displaying your data request results, and will allow you to perform an immediate on-screen download of your data in the form of a comma-delimited excel file .

- selecting “Download via e-mail” will cause your requested data sets to be downloaded to the DNR public FTP site, and you will soon receive an e-mail directing you to your data.

If you do not want to download the file, click on the blue “Back” button, as this will return you to the screen where you may enter a new data request.

5) To exit the Retrieve screen, click on the “exit door” toolbar button, or select Action and then Exit on the menu.

2. Reports

1) The Reports function is a way to query individual Data Sheets that have been committed to the database.

2) From the menu bar choose Reports and then select Vegetation Sheets.

3) The Data Sheet is already in query mode, so enter a Station ID into the Station field (the F9 function key may be used to invoke the BMS Stations pick list).

4) After choosing a station, select the “Execute Query” button on the toolbar (or use the F8 function key). All verified Data Sheets for that station will be returned, and you can use the arrow keys or the “Page Up” and “Page Down” keys to scroll through them.

5) To exit the Data Sheet, click on the “exit door” button on the toolbar, or go to the menu bar and choose Action and then select Exit, or click on the “x” in the upper right hand corner of the data sheet.

II. EMERGENT VEGETATION DATA

D. Supplement

1. Queries and the Count Hits function

Sometimes it is helpful to know how many records will be retrieved by a query done in SONRIS. For example, if you are entering a large number of emergent vegetation

Data

Sheets for project BA-20, and you can't remember if you've already entered 17 sheets or 20 sheets but you want to know for certain, you can perform a "Query > Count Hits" action to find out exactly how many sheets would be retrieved if you queried the buffer space for all BA-20 data. This is how the action would be executed:

querying

- a) go to Query on the menu and select "Enter Query".
- b) enter the query criteria in the appropriate field (for example, if you are
- c) for all sheets entered for project BA-20, you would enter "BA20-%" into the Station Name field.
- d) go to Query on the menu and select "Count Hits".
- e) at the bottom of the screen, a message will occur telling you how many records will be retrieved if you complete your query using the criteria that you've stated.
- f) if the hits count is satisfactory, you can complete your query and receive your results by going to the Query menu and selecting "Execute Query."

The "Count Hits" function can be done in any screen where a regular Query can be done.

II. EMERGENT VEGETATION DATA

D. Supplement

2. Troubleshooting

Error Message	Possible Problem and/or Solution.

Note: there are currently no commonly recurring error messages in the emergent vegetation data management screens, but this page has been included to accommodate future possible error messages.

II. EMERGENT VEGETATION DATA

D. Supplement

3. Notes

III. SONRIS Additional Features

A. SONRIS Help

The SONRIS Help feature is a resource to database users that is available on-screen while using SONRIS. It can be activated by either selecting “Help” from the menu bar, or by selecting the blue “?” icon on the toolbar. Doing this will open an Explorer window containing information that is helpful with and relevant to using the functions relating to the screen that you were viewing when you activated the Help feature. (For example, if you are in one of the Vegetation database screens and you select the blue “?” icon on the toolbar, the window that opens will give you information on how to enter, conduct QA/QC procedures on, and retrieve emergent vegetation data in SONRIS).

Also contained within SONRIS Help is a section titled **Standard Navigation, key-strokes, etc.** This section provides useful information on the topics of keystroke functions, screen structures, and queries within SONRIS.

The information contained in the Help pages will be updated regularly as needed, and constitutes a digital version of the SONRIS User’s Manual.

B. Display Audit Information

In screens where it is appropriate, the Help menu will have an entry called **Info**, and the toolbar will have an additional button with the icon of a magnifying glass. The functionality of this menu item and toolbar button is to access the “**Audit**” columns in the database for the current record and subsequently cause the following information to be displayed:

- the date the record was created
- the logon user who created the record
- the date of last modification to the record
- the logon user responsible for the last modification to the record.