North Carolina Department of Environment and Natural Resources

Division of Water Quality

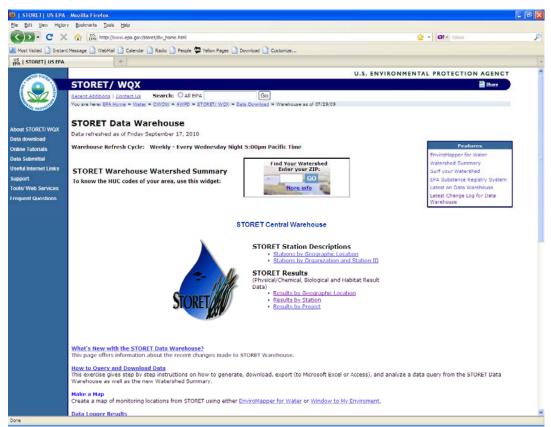# Retrieving Benthic Macroinvertebrate Data from STORET

North Carolina Benthic Macroinvertebrate (Benthos) data are made available to the public through the United States Environmental Protection Agency's STOrage and RETrieval data management system (a.k.a. STORET) at http://www.epa.gov/storet/.

Getting Started

From the STORET homepage (http://www.epa.gov/storet/), click on "**Obtaining Water Quality Data**" located along the bottom of the page or **Download Data** in the menu on the right hand side of the page. The STORET Database Access page will appear.

Benthos data are stored in the **Modernized version of STORET**. Click on "**Browse or Download Modernized STORET Data**". You may need to scroll down the page to view the appropriate yellow button. This will open the STORET Data Warehouse page (Fig. 1)

Fig 1: STORET Data Warehouse Home Page

Search for

Search Benthos Results by Geographic Location

1. From the STORET Data Warehouse page (Fig.1) under **STORET Results**, click on "**Results by Geographic Location**".

2. The Regular Results by Geographic Location page will open. Begin the search by specifiying **State/County, Latitude/Longitude or 8 digit Hydrologic Unit Code**.

3. **Station Type** should be set to "Select All"

4. Specify **Date Range(s)** if desired. Otherwise, leave the default setting.

5. **Activity Medium** should be set to "Select All"**.**

6. Set **Activity Intent** to "Population Census" and **Community Sampled** to "Benthic Macroinvertebrates".

7. For Benthos data the **Characteristic** is represented by macroinvertebrate taxonomic names. When searching by **Characteristic**, set the **"Search By"** box to Characteristic Name and search by taxonomic name. You may create a characteristic list of up to 50 items. Be sure to leave the **"Hide Taxonomic Names"** box **unchecked.**

8. Once the search criteria are entered, click "**Continue**".

9. The Result Search Summary page will open. The page will specify how many results are in the warehouse for the criteria entered. (If the result number is zero then click the "Back" button and return to the previous page to modify the search.) At the bottom of the page there is a list of report data elements. Choose from selected elements or add additional ones depending on availability.

10. All data requests are completed by batch processing which requires the requestor to enter a **valid email address** and a **three-character prefix**. Click **"Immediate"** or **"Overnight**" Batch Processing. Immediate reports are for small searches (<300,000) and are available in 1-15 minutes. Overnight reports are for a maximum of 600,000 results and available the next day.

11. The Result Data Request Information page will open. This page confirms the custom batch processing request. The requestor will also receive an email confirming the request has been submitted.

12. Once the request is completed, the requestor will receive an email with a link to download your file. Save the file to your computer. This is a compressed file, which can be opened using WinZip[®] or another file compression software.

13. Downloads with less than 65,000 records can be opened in Excel[®]. Larger downloads can be opened in Access[®] or other statistical software packages.

14. **Note: An Activity ID is associated with each DWQ Benthos record and should be used to distinguish DWQ data from other datasets. DWQ IDs will begin with "NCBenthosMon…" and will be followed by an alpha numeric code.**

Search for Benthos Results by Station

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Important Items to Remember when Searching for Benthos Data by Station

NC DWQ Organization identification:
21NC03WQ NCDENR-DWQ WQX Water Quality Data

Activity ID distinguishing DWQ Benthos Macroinvertebrate Monitoring data
An Activity ID is associated with each Benthos Macroinvertebrate record. This ID will begin with "**NCBenthosMon…**" and will be followed by an alpha numeric code.

Station Identification
All stations begin with a letter (A-Q), followed by the letter "B" designating a Benthos Macroinvertebrate sample, then ending with a combination of numbers (e.g. AB124). The beginning letter represents a particular river basin as follows:

A-Broad	G-Little Tennessee	M-Pasquotank
B-Cape Fear	H-Savannah	N-Roanoke
C-Catawba	I-Lumber	O-Tar/Pamlico
D-Chowan	J-Neuse	P-White Oak
E-French Broad	K-New	Q-Yadkin/Pee Dee
F-Hiwassee	L-Watauga	

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1. From the STORET Data Warehouse page (Fig. 1) under **STORET Results**, click "**Results by Station**".

2. The Results by Station page will open. Select the NC DWQ Organization identification (**21NC03WQ NCDENR-DWQ WQX Water Quality Data**)

3. Select a **Search Type**: by Station ID (if known) or Station Name (Waterbody). Station Alias is not available.

4. Enter a search string and click Search Stations. Select one or multiple stations from the available list. The selected stations will appear in the box at the bottom of the Station Search area.

5. Specify **Date Range(s)** if desired. Otherwise, leave the default setting.

6. **Activity Medium** should be set to "Select All"**.**

7. Set **Activity Intent** to "Population Census" and **Community Sampled** to "Benthic Macroinvertebrates".

8. For Benthos data the **Characteristic** is represented by macroinvertebrate taxonomic names. When searching by **Characteristic**, set the **"Search By"** box to Characteristic Name and search by taxonomic name. You may create a characteristic list of up to 50 items. Be sure to leave the **"Hide Taxonomic Names"** box **unchecked.**

9. Once the search criteria are entered, click "**Continue**".

10. The remaining steps are the same as searching **STORET Results by Geographic Location** above (9 thru 14).

Search for Station Descriptions by Geographic Location

1. From the STORET Data Warehouse page (Fig.1) under **STORET Station Descriptions**, click "**Stations by Geographic Location**". **Note: Station Results are not available from this search.**

2. Begin the search by specifiying **State/County, Latitude/Longitude or 8 digit Hydrologic Unit Code**.

3. **Station Type** should be set to "Select All".

4. For Benthos data the **Characteristic** is represented by macroinvertebrate taxonomic names. When searching by **Characteristic**, set the **"Search By"** box to Characteristic Name and search by taxonomic name. You may create a characteristic list of up to 50 items. Be sure to leave the **"Hide Taxonomic Names"** box **unchecked.**

5. Select the NC DWQ Organization identification (**21NC03WQ NCDENR-DWQ WQX Water Quality Data**).

6. Once the search criteria are entered, click "**Continue**".

7. The Station Search Summary page will open and provide the number of stations associated with your search. At the bottom of the page there is a list of report data elements. Choose from selected elements or add additional ones depending on availability.

8. The remaining steps are the same as searching **STORET Results by Geographic Location** above (9 thru 14).

9. See *"Important Items to Remember when Searching for Benthos Data by Station"* above.

Search Station Descriptions by Organization and Station ID

1. From the STORET Data Warehouse page (Fig.1) under **STORET Station Descriptions**, click "**Stations by Organization and Station ID**". **Note: Station Results are not available from this search**

2. Select the NC DWQ Organization identification (**21NC03WQ NCDENR-DWQ WQX Water Quality Data**).

3. Select a **Search Type**: by Station ID (if known) or Station Name (Waterbody). Station Alias is not available.

4. Enter a search string and click Search Stations. Select one or multiple stations from the available list. The selected stations will appear in the box at the bottom of the Station Search area.

5. **Station Type** should be set to "Select All".

6. For Benthos data the **Characteristic** is represented by macroinvertebrate taxonomic names. When searching by **Characteristic**, set the **"Search By"** box to Characteristic Name and search by taxonomic name. You may create a characteristic list of up to 50 items. Be sure to leave the **"Hide Taxonomic Names"** box **unchecked.**

7. Once the search criteria are entered, click "**Continue**".

8. The remaining steps are the same as searching **STORET Results by Geographic Location** above (9 thru 14).