Watershed Education Database Help
# Contents

- About the Watershed Education Database ................................................................. 3
- Logging In ....................................................................................................................... 3
- Register/Create an Account .......................................................................................... 4
- Forgot Password ........................................................................................................... 5
- My Sites ......................................................................................................................... 7
- Create a New Monitoring Site ...................................................................................... 8
- Notes on Creating Sites ............................................................................................... 9
- My Sites Page ............................................................................................................... 10
- Update My Site ............................................................................................................ 11
- Watershed Investigations List ..................................................................................... 13
- Notes on Saving Watershed Investigations .................................................................. 14
- Save Progress Button .................................................................................................. 14
- Submit Button .............................................................................................................. 14
- Not Measured Check Box ............................................................................................. 14
- Physical Tab ................................................................................................................ 16
- Biological Tab ............................................................................................................. 20
- Comments Tab ........................................................................................................... 22
- Submitting Your Watershed Investigation .................................................................. 23
- Contact Us Page .......................................................................................................... 24
- Finding the Help File ................................................................................................... 25
- Editing Your Profile .................................................................................................... 26
- Page Links .................................................................................................................... 27
About the Watershed Education Database

The Watershed Education Database was designed to be a data storage and sharing location for educators and environmental educators who are monitoring Pennsylvania streams utilizing DCNR’s Watershed Education (WE) Curriculum, but it can be used by anyone to store stream data.

For more information on the WE Curriculum, please visit the Watershed Education Website at http://watersheded.dcnr.pa.gov or click on the icon on the upper right-hand corner of the screen.

The WE Database is free and open to all to view. It is designed to be useable on 10” tablets as well as desktop and laptop computers. It is not recommended for use on smart phones (iPhone, Android, etc.)

Logging In

When you first open the website, you will be directed to the Login page. If you have already registered, enter your Username and Password and click “Log In.” The system will keep you logged in for six hours. After that time, you will need to login again. Make sure to use the “save progress” and “submit” buttons. If you have not yet registered, see instructions on page 4.
Register/Create an Account

If you have not yet registered, click “Register” in the top menu bar. The email that you provide can only be associated with one user account. Once you have created them, remember your username and password.

Username:
Enter a username. Usernames must be between 8 and 50 characters in length. Your username can be your email address. Each time that you log in, the system will greet you via your username. Once submitted, your username cannot be changed.

Password:
Passwords must be between 8-12 characters in length and are case sensitive. Passwords must contain ALL of the following:
  - At least one alphabetic character
  - At least one numeric (#) character
  - At least one special character (!@#$%^&*)

If you are registering as a PA State Park, please enter your park mailing address and type your park name in the School/Organization box. Complete all required fields and click the “Register” button at the bottom of the page.
Forgot Password

If you previously registered but you have forgotten your password, click “I forgot my password.”

Enter either your username or email address and click “Continue.”
Forgot Password (continued)

You will receive an email message containing a link that you can use to reset your password. It will also provide your username. Open the email message and click the link.

Enter and confirm your new password. Click “Reset.”

You will see a confirmation that your password has been changed. Click “OK” to be redirected to the Login page.
Registering will automatically log you in and take you to your My Sites page. Click the “+” button to add a new site. Utilize “My Sites” to record all of the stream (pond, lake, river, etc.) locations where you monitor water quality.
Create a New Monitoring Site

First select your “Major Basin.” This will filter the Watersheds dropdown list. Choose your “Watershed” which will filter the Stream Name dropdown list. Choose your stream name from the dropdown list. Complete the remaining required fields and click the “Create” button. This will save your new site.

Create New Site

* Represents a required field.

**Major Basins**

Susquehanna

**Watersheds**

Upper Susquehanna-Tunkhannock

Get help identifying your watershed

**Stream Name**

Wyalusing Creek

Get a map of Pennsylvania streams

**Site Name**

Site A

**Latitude (Decimal)**

41.67325

**Longitude (Decimal)**

-76.26513

**Site Description (Ex: Describe your stream. Include stream order, landmarks near your stream and shade over your stream)**

Bend of Wyalusing creek just outside town, well shaded by trees on the far bank.

[Create]  [Clear]  [Cancel]
Notes on Creating Sites

To review background information on Watershed Education and more help with stream monitoring, click on the Watershed Education website icon which can be found in the upper right-hand corner of the database.

First, choose your major water basin.

What is a water basin? A water basin is the large land area that is made up of many watersheds that drain into a river or estuary system. Pennsylvania State Parks recognizes 5 major water basins (Delaware, Susquehanna, Ohio, Potomac, and Great Lakes). The Great Lakes Basin includes the Erie and Genesee Watersheds. The Potomac and Susquehanna are part of the Chesapeake Bay Watershed.

Next, choose your watershed.

What is a watershed? A watershed is the land area from which surface water runoff and groundwater drain into a stream channel, lake, reservoir, or other body of water. If you do not know your watershed, go to http://cfpub.epa.gov/surf/locate/index.cfm If you aren’t sure of the name of your watershed but you know the proper name for your stream, choose your estimation for your watershed and then scroll through the list of streams that populate for that watershed. If your stream is not in that list, go back and choose a different watershed until you find your stream name.

Finally, choose your stream name.

The list of stream names generated will be specific to the water basin and watershed that you chose. If you do not know your stream name, check out a topographic map for your stream area, find your stream on the Pennsylvania Higbee Stream Map http://www.streammaps.com/showmap.php?id=SMPA (go here to purchase a map), or consult the Watershed Education Coordinator.

If you are monitoring the same stream in more than one location, make sure to name your site(s) with a descriptor, such as “Site A” or “Site near school”.

Latitude and Longitude

First, use a GPS, smartphone, or a computer to obtain the Latitude and Longitude coordinates for your stream site.

- To find your latitude and longitude coordinates in your smartphone, go to the App store, and search for the free “WhereAmIAt?” App (or any alternate app that provides decimal Latitude and Longitude coordinates). Because these devices will give you coordinates for your current location, make sure that you are standing at your stream monitoring site when you use them.
- You can also find your Latitude and Longitude coordinates remotely using Google Maps. Find your monitoring site in Google Maps and choose “Satellite View” (look for box in lower left corner)- https://www.google.com/maps/@40.2431402,-76.888794,10476m/data=!3m1!2m2!1m7!3d40.2431402!4d-76.888794!13m3!1m2!1s0x0:0x1234567890123456!5m2!1sEN!2sUS (this map is a satellite view of Harrisburg). Simply use the search to find your location. This application provides accurate coordinates to eight places after the decimal (ex: 40.326645).
You must enter values with a minimum of four decimal places (ex: 40.3255). There is no decimal maximum, but the parameter limits for Latitude (39.117206 to 41.999600) and Longitude (-80.590714 to -74.424963) are set just outside of the Pennsylvania state boundaries. Coordinates outside of these parameters will not be accepted by the system. To convert your latitude and longitude coordinates from degrees to decimal, go here- https://www.fcc.gov/encyclopedia/degrees-minutes-seconds-to-from-decimal-degrees

My Sites Page
Creating a site will return you to your My Sites page. Your new water quality monitoring site will be displayed. Click the “Edit” (pencil) button to edit a site. Click the “Delete” (trashcan) to delete a site. Before you can delete a site, you must first delete any investigations recorded for that site. Once a site is deleted, it cannot be recovered.
**Update My Site**

You can edit your site at any time. To do this, go to the My Sites page and click the “Edit” button (pencil). Once you have finished any edits to your site, click the “Update” button to save your work.

Update Wyalusing Creek - Site A

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Basins</td>
<td>Susquehanna</td>
<td></td>
</tr>
<tr>
<td>Watersheds</td>
<td>Upper Susquehanna-Tunkhannock</td>
<td><a href="#">Get help identifying your watershed</a></td>
</tr>
<tr>
<td>Stream Name</td>
<td>Wyalusing Creek</td>
<td><a href="#">Get a map of Pennsylvania streams</a></td>
</tr>
<tr>
<td>Site Name</td>
<td>Site 1</td>
<td></td>
</tr>
<tr>
<td>Latitude (Decimal)</td>
<td>41.67325</td>
<td></td>
</tr>
<tr>
<td>Longitude (Decimal)</td>
<td>-76.26513</td>
<td></td>
</tr>
<tr>
<td>Site Description</td>
<td>Bend of Wyalusing creek just outside town, well shaded by trees on the far bank.</td>
<td></td>
</tr>
</tbody>
</table>

[Update] [Cancel]
Update My Site (continued)

Your “My Sites” page will be updated with your edits. Click the “Investigations” button in your site’s row to see the current investigation.

![Watershed Education Database Database](image)

My Sites

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Number of Investigations</th>
<th>Create New Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wyalusing Creek - Site A</td>
<td>Investigations 0</td>
<td></td>
</tr>
</tbody>
</table>

Pennsylvania Department of Conservation and Natural Resources

Bureau of State Parks
9/2015
Watershed Investigations List

On the My Sites page, you will see an empty investigations list for your site. To add data to your selected stream monitoring site, click the “Create New Investigation” button.

This page displays all of the investigations entered for the selected site. Click the “Edit” (pencil) button to edit an investigation. Click the “Delete: (trashcan) to delete an investigation. **Once an investigation is deleted, it cannot be recovered.**

The Investigation data entry page is separated into five tabs – Conditions, Physical, Chemical, Biological, and Comments
Notes on Saving Watershed Investigations

Save Progress Button
All required Investigation fields are marked with red asterisks (*). You must complete all of these fields to submit an investigation, but once you have completed all of the fields in the conditions tab, you may save a partially-completed investigation to finish at a later time:

- Date of Monitoring
- Weather
- Air Temperature
- Stream Temperature

Click “Save Progress” to save a partially-completed investigation. We recommend that you do this often to avoid losing work. If you click on “Save Progress” for each tab and close out of the WE Database, your work will be saved. Your investigation will be listed as “In Progress” in your Investigation List. By default, In Progress Investigations will be listed first in your investigation list. In Progress Investigations can be edited.

Submit Button
All required fields must be either completed or marked “not measured” (see below) for an Investigation to be submitted. Click “Submit” to submit a completed investigation. Submitted investigations can be edited.

Not Measured Check Box
If you did not measure a value for a required field, do not enter a false value. Instead, you may mark certain required fields as “Not Measured.” This option is not available for non-required fields. If you did not measure a value for a non-required field, simply leave it blank. Generally, selecting “Not Measured” clears any associated fields, and re-entering data into those fields deselects “Not Measured.”

The Conditions tab does not contain any fields for which “Not Measured” may be selected.

On the Physical tab, you may select “Physical Not Measured.” This clears all fields on the Physical tab, and disables the “Calculate Volume of Flow” button and calculation.

- Selecting “Width not measured” clears the Width field, and disables the “Calculate Volume of Flow” button and calculation.
- Selecting “Depth not measured” clears all of the Depth measurement fields, and disables the “Calculate Volume of Flow” button and calculation.
- Selecting “Velocity not measured” clears all of the Velocity measurement fields, and disables the “Calculate Volume of Flow” button and calculation.
- Selecting “Substrate not measured” clears the Select Substrate dropdown, and disables the “Calculate Volume of Flow” button and calculation.

On the Chemical tab, you may select “Chemical Not Measured.” This clears all fields on the Chemical tab. You must select values for Color, Odor, and Clarity, but the remaining required fields on the Chemical tab can be cleared and disabled by selecting “Not Measured.” On the Biological tab, you may select “Biological Not Measured”. This clears all fields on the Biological tab, and disables the “Calculate Stream Quality Rating” button and calculation.
**Conditions Tab**

Fill in all of the required fields on the Conditions tab and click “Save Progress.” Make sure to enter the temperature in Celsius. Go here to convert degrees Fahrenheit to degrees Celsius - [http://fahrenheittocelsius.com/](http://fahrenheittocelsius.com/).

If you open the Conditions tab and click “Save Progress” without entering any information, you will see error messages notifying you which information you are required to enter to save an incomplete investigation. Note the red text below.

A measurement of air temperature and stream temperature should be taken each time you monitor your stream regardless of whether you are completing a physical investigation. Temperatures are tied to chemical results and the types of macroinvertebrates that are found.
Conditions Tab (continued)

Once you have successfully completed all of the required fields, click “Save Progress.”

You will see a notice that your investigation was created successfully. Click “Back to Investigation” to continue entering data.
## Physical Tab

Open the Physical tab by clicking its title. If you did not conduct physical measurements during this investigation, click “Physical Not Measured.” A warning will pop up, “Are you sure you want to clear all data on this tab?” Since you haven’t entered any data, this will simply mark physical as “not measured.” Note that the “Calculate Volume of Flow” button is disabled, since the necessary data has not yet been entered. Enter a value for width, and click “Save Progress.”

![Physical Tab Interface](image)

You will get a notification that your investigation was updated. Click “OK.”

![Notification](image)

If you click “Width not measured”, the value you entered for width will be cleared. Note – the value will not be deleted from the database until you click “Save Progress.”

![Warning](image)

If you type a value into the Width field again, the “Width not measured” box will be unchecked.

![Warning](image)
Physical Tab (continued)

Complete all of the fields on the Physical tab. This form is designed to mimic the layout of the standard DCNR Watershed Education Physical Data Sheet. Complete all of the required fields and non-required fields as desired, and click “Save Progress.”

Note that once all required measurements are the entered, the “Calculate Volume of flow” button is enabled. Click the button to calculate volume of flow.
**Chemical Tab**

Open the Chemical tab by clicking its title. If you did not conduct chemical tests during this investigation, click “Chemical Not Measured.” A warning will pop up “Are you sure you want to clear all data on this tab?” Since you haven’t entered any data, this will simply mark chemical as “not measured.”

This form is designed to mimic the layout of the standard DCNR Watershed Education Chemical Data Sheet so that tests shown on that form are listed first. Unless you choose, “Chemical Not Measured” Color, Odor, and Clarity must be answered. If you did not measure the other required tests, click “Did Not Measure” for each one. The database also lists tests that are not found on the DCNR WE Chemical Data Sheet. These tests are optional and are listed after the required tests. Complete all of the required fields and non-required fields as desired, and click “Save Progress.”

![Chemical Tab Form](image)

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**Freshwater Acceptance Levels for Chemical Parameters**

<table>
<thead>
<tr>
<th>Test</th>
<th>Level (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>No odor</td>
</tr>
<tr>
<td>Clarity</td>
<td>Cloudy</td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td>6.00 (0-18 ppm)</td>
</tr>
<tr>
<td>pH</td>
<td>7 (0-14)</td>
</tr>
<tr>
<td>Turbidity</td>
<td>12.00 (0-300 ntu)</td>
</tr>
<tr>
<td>Nitrates</td>
<td>0.67 (0-12 ppm)</td>
</tr>
<tr>
<td>Total Hardness</td>
<td>100.67 (0-400 ppm)</td>
</tr>
<tr>
<td>Alkalinity</td>
<td>64.33 (0-400 ppm)</td>
</tr>
<tr>
<td>Iron</td>
<td>0.1 (0-300 ppm)</td>
</tr>
</tbody>
</table>

- *Color, Odor, Clarity, pH, Turbidity, Nitrates, Alkalinity, and Iron fields are required.
- Dissolved Oxygen and Hardness are optional.

This will simply mark chemical as “not measured.”
Biological Tab

Open the Biological tab by clicking its title. If you did not conduct biological sampling during this investigation, click “Biological Not Measured.” A warning will pop up “Are you sure you want to clear all data on this tab?” Since you haven’t entered any results, this will simply mark biological as “not measured.”

This form is designed to mimic the layout of the standard DCNR Watershed Education Biosurvey Data Sheet, so organisms listed on that form are shown by default, but other organisms listed in the WE database can also be selected.

For each organism found in your sample, you can either enter the exact Count or the Relative Abundance (RA) value corresponding to the count. The system allows you to enter a count for one species and a RA Weighting Factor for a different species. It is up to you how you would like to record the data:

\[
\begin{align*}
R &= (1 - 9) \\
C &= (10 - 99) \\
D &= (100 \text{ or more})
\end{align*}
\]

*Please refer to the Biological section of the DCNR Watershed Education Curriculum for more information on this topic.*

For any given organism, entering an exact count will deselect any RA Factor that was selected, and selecting an RA Factor will clear any exact count that had been entered.

Aquatic invasive species, such as the Zebra Mussel and the Rusty Crayfish, are marked with an symbol. For help with invasive species identification, go here- [http://www.paseagrant.org/projects/pennsylvanias-field-guide-to-aquatic-invasive-species/](http://www.paseagrant.org/projects/pennsylvanias-field-guide-to-aquatic-invasive-species/)
Biological Tab (continued)

If you identify an organism in your sample that is not listed on the Biosurvey Data Sheet, click “Show More” below the taxa list for that group to see additional organisms with the same range of Pollution Tolerance Values. The organisms in this list are arranged alphabetically by common suborder or family, i.e. Caddisfly, Case-maker. You do not need to click on any of the macroinvertebrates that are listed in the “other” section of each taxa group for the Biological Tab to be considered complete.

If you find a Benthic Macroinvertebrate that is not listed, please use the links below to positively identify it. If possible, identify it down to the common family name, the latin name, and determine the Pollution Tolerance Value (PTV) for that organism. Contact the DCNR Watershed Education Coordinator to request the addition of this macroinvertebrate to the database (click on “Contact Us.”)

For help in identifying Benthic Macroinvertebrates, visit:
http://www.stroudcenter.org/macros/index.shtm
http://www.macroinvertebrates.org/#/ (mayflies, caddisflies, & stoneflies)
http://www.nwnature.net/macros/docs/know_macros.pdf
http://www.dep.wv.gov/WWE/getinvolved/sos/Pages/Benthics.aspx

When you have finished entering Counts and/or RA Factors for all the organisms found in your sample, calculate the Stream Quality Rating by clicking the button near the bottom of the page. The score will be displayed, along with its corresponding stream Rating. You can view a breakdown of the rating scale by clicking the question mark icon near the Score box. If you are working with students, you may want to have them do these calculations on their own. Refer to the Biosurvey Data Form and Biological section of the DCNR Watershed Education curriculum for more information on how to complete these calculations.

It is required that you enter at least one organism Count and/or RA Factor, unless you select “Biological Not Measured.” This clears all fields on the Biological tab and disables the “Calculate Stream Quality Rating” button and calculation. Complete all of the required fields and non-required fields as desired, and click “Save Progress.”
Comments Tab
If you have any additional comments to make pertaining to your investigation, enter them on the Comments tab.

Students just completed a unit using the watershed atlas on the internet.
Submitting Your Watershed Investigation

Click “Submit” to submit your completed investigation. All required fields must be either completed or marked as “not measured” for an investigation to be submitted. You can check the status of your investigation at any time by clicking the “Submit” button. If you have required fields that are not completed, a list of fields that need to be completed will be displayed.

If you have fulfilled all of the necessary requirements, click the “Submit” button.
You will receive a notification that your investigation has been submitted successfully.
Contact Us Page

If you would like to contact the DCNR Watershed Education Coordinator concerning the Watershed Education Database, click “Contact Us” in the top navigation and complete the required fields. Your contact name, phone number, and email address will be pre-populated from your profile. Use the “Contact By” button to indicate whether you prefer to be contacted by phone or email. If you would like a copy of the message sent to your, check the box next to “Send me a copy of this message.”
Finding the Help File

The Help page contains a link to this Help file.
Editing Your Profile

You can change your contact information at any time by clicking the “My Profile” button in the top navigation bar, making the desired changes, and clicking the “Update” button. Your username cannot be changed.
Page Links

Every page of the site includes a link to the DCNR Watershed Education website in its upper right corner and a link to the Pennsylvania DCNR Home website along the bottom.