

How to use iNaturalist for Discovering Didymo's Distribution

Introduction

Thank you for participating in Discovering Didymo's Distribution, a collaboration between Trout Unlimited, Trout Unlimited Canada, North Carolina State University, and the University of Calgary. To collect your potential Didymo observations, we're using [iNaturalist](#), a free online citizen science application operated by the California Academy of Sciences. iNaturalist allows us to build a crowdsourced database of potential Didymo observations containing data scientists can use, including maps and photos, as well as allowing participating anglers and citizen scientists to learn where Didymo is present or absent.

Getting Started

To get started adding your Didymo observations to the project, you'll need to go to sign up for an account – it's free and easy. You can do this either from the web page at www.inaturalist.org, or by installing the free iNaturalist mobile app from the Apple App store for iOS, or from Google Play for Android.

Adding Didymo Observations

Once you're signed in, you'll notice that iNaturalist has numerous projects being conducted for just about any organism you can think of. You'll want to be sure that your observations get associated with our Didymo project. We'll explain how to do that in the instructions below. The steps will differ slightly depending on whether you're using the iNaturalist **mobile app** or accessing the **web page** version via your computer's browser. See the appropriate section for each of these below:

Mobile App – Note that this app enables you to enter data while offline in the field, and will then sync to iNaturalist once you reconnect to the internet.

1. Find the Didymo project: Click More, select Projects, and then use the Search box at the top of the screen. If you enter Didymo, you'll find the project named "Discovering Didymo's Distribution". Click it.
2. Join the project: Click "Join". This will make it easier to find the project, and your observations, next time.
3. Add your observation: Click the Observe button (iPhone) or the green plus sign (Android).
4. Add Photo(s): Add a photo, either by taking one now with your phone, or by selecting one you've taken earlier from your phone's photo collection. **Note**: Please submit **at least two photos** of your observation site: one or more showing the **streambed** where you took the sample, and one or more that show the **general character** of the stream: size, flow, vegetation, etc. If your phone's GPS is on before taking a photo, the location will automatically be saved.
5. What did you see? Optional. You probably won't know whether you've observed Didymo until you send your sample to the lab for analysis.

6. Notes (optional)
7. When did you see it? Select the Date and time, if different than the default time stamp.
8. Where were you? By default, your phone will show your current location. To modify it, click the coordinates and zoom in on the map as far as possible to locate the correct position and click there. At the bottom of the map, you can choose a basemap, either Standard, Satellite, or Hybrid, to help you find the location.
9. Geo Privacy: This feature hides the location from other viewers. Normally, it should be left as "Open." If you want to hide the location for some reason, you can select "Private", which hides it from the map, or "Obscured", which displays the location as a random point within 10km of the actual location.
10. Projects: Click on "Projects," then toggle the slider switch next to "Discovering Didymo's Distribution", and fill out the data fields that will appear below. Required fields are displayed in boldface or have asterisks. See the Data Fields section near the bottom of this document for additional guidance.

Web page (inaturalist.org)

1. Find the Didymo project: At the top of any iNaturalist page, place your mouse over Projects, and in the Search box, type Didymo. You'll find the project titled "Discovering Didymo's Distribution". Click it.
2. Join the project: Click "Join this project". This will make it easier to find the project, and your observations, next time.
3. Explore others' observations: Once inside the Didymo project, you can browse all of the observations entered so far and view them on an interactive map.
4. Add your observation(s): Click the red "Add Observations" button, right side of the Didymo project page.
5. What did you see? Optional. You probably won't know whether you've observed Didymo until you send your sample to the lab for analysis.
6. When did you see it? Select the Date and time, if different than the default time stamp.
7. Description (optional)
8. Tags (optional)
9. Where were you? For best accuracy, zoom in on the map as far as possible, and click the location where you sampled. Alternatively, enter your GPS coordinates.
10. Geoprivacy: This feature hides the location from other viewers. Normally, it should be left as "open." If you want to hide the location for some reason, you can select Private, which hides it from the map, or Obscured, which displays the location as a random point within 10km of the actual location.
11. Add photos: Upload photos from your hard drive by clicking "Choose Files". Or upload from your Flickr, Picasa, or Facebook account by linking those accounts using the appropriate "Link" buttons on the screen. You can add multiple photos. **Note**: Please submit **at least two photos** of your observation site: one or more showing the **streambed** where you took the sample, and one or more that show the **general character** of the stream: size, flow, vegetation, etc.

12. Fields: This is where you will fill out the specific data fields we need for Discovering Didymo's Distribution. Required fields are marked with an asterisk. See the **Data Fields** section below for additional guidance.
13. Once you've finished filling out the data fields, click "Save observation" to complete your entry

Data Fields (Required fields shown in boldface.)

1. **Stream**: Name of stream sampled
2. **Sampler Name**: Your name
3. **Didymo Mats?** Didymo mats are described as feeling rough to the touch much like wet cotton wool. They are generally tightly adhered to substrate and can form long strings or appear as small tufts.
4. **Shade Level**: High, medium, or low: High: 75% or more of the stream or river is shaded by bank vegetation. Low: Less than 25% of the stream or river is shaded by bank vegetation.
5. Water flow level: Flooding/High/Moderate/Low/Drought
6. Clarity of water: Turbid/Cloudy/Clear
7. **Algal scraping taken and sent for analysis**: Yes/No
8. **Algae Scraping Vial ID number**: If an algae scraping is taken, please record the unique algae scraping vial ID number associated with this observation.
9. Stream Substrate: Rock/gravel/mud/mixed
10. Other algae species present
11. When you have finished filling out the data fields for Discovering Didymo's Distribution, simply click "Save observation" on the web page. If using a mobile app, tap the checkmark in the top right corner (Android) or the < in the top left corner (iPhone) to return to the observation screen and then tap the checkmark (Android) or the "Save" button (iPhone) to complete your observation.
12. Click Upload or Sync to send your data to the iNaturalist online database. If you are currently offline, your phone will save the data until you can connect to the internet once again. At that time, click Upload and send your data to the iNaturalist database.

Alternatively, you can have the app automatically upload your observations. This is controlled by a setting located here: Me -> Settings (the gear icon at top left) -> Automatic Upload.

Additional Resources

Mobile App tutorial: Inside the app, click Settings, Me, Tutorial.

iNaturalist Getting Started pages: <http://www.inaturalist.org/pages/getting+started>

iNaturalist Google Group: <https://groups.google.com/forum/#!forum/inaturalist>