Getting Started with Lake Observer
v0.4
6/26/2015

App>Download Page

Download Instructions:

Research scientists, citizen scientists and lake enthusiasts are invited to test the Lake Observer app and provide feedback to developers. Download instructions for Android (Google) and iOS (Apple) devices are provided below.

Android (Google)

1. From your device, follow this link to the Google Play store:
   https://play.google.com/store/apps/details?id=org.lakeobserver.observer.android

2. When the download and installation is complete, you can open the app from Google Play or by using the Lake Observer icon on your device.

For GLEON Alpha and Beta testers and other savvy Android users who want to help with development of the app:

1. Please join the Beta Testers group in Google groups using the gmail address that is associated with your Android device (smartphone or tablet) before downloading the app: https://groups.google.com/forum/#!forum/lake-observer-beta-testers.

2. Once you have joined the Beta Testers group, the current test version of the Lake Observer app can be downloaded by following this link from your device: https://play.google.com/apps/testing/org.lakeobserver.observer.android.

3. When the download and installation is complete, you can open the app from Google Play or by using the Lake Observer icon on your device.

4. If you have an older version of the previous LSPA recorder app on your device, it can be removed.

iOS (Apple)

1. From your device, follow this link to the App Store: https://appsto.re/us/1Nrv5.i.

2. When the download and installation is complete, you can open the app from the App Store by selecting "open" or by using the Lake Observer icon on your device.

3. If you have an older version of the "LSPA recorder" app on your device, it can be removed.

Search and View Data

Submitted data can be searched and viewed on the Search page. There is also a Recent Observations feed on the Lake Observer Home page.

We appreciate your feedback!

Please Contact Us to provide feedback about using the app or to report bugs.

App>Guide Page:

Lake Observer User Guide

==[Insert Table of Contents list linked to the main sections below]==

User Registration and Login Instructions:

Lake Observer app download and installation instructions can be found here: https://www.lakeobserver.org/download.
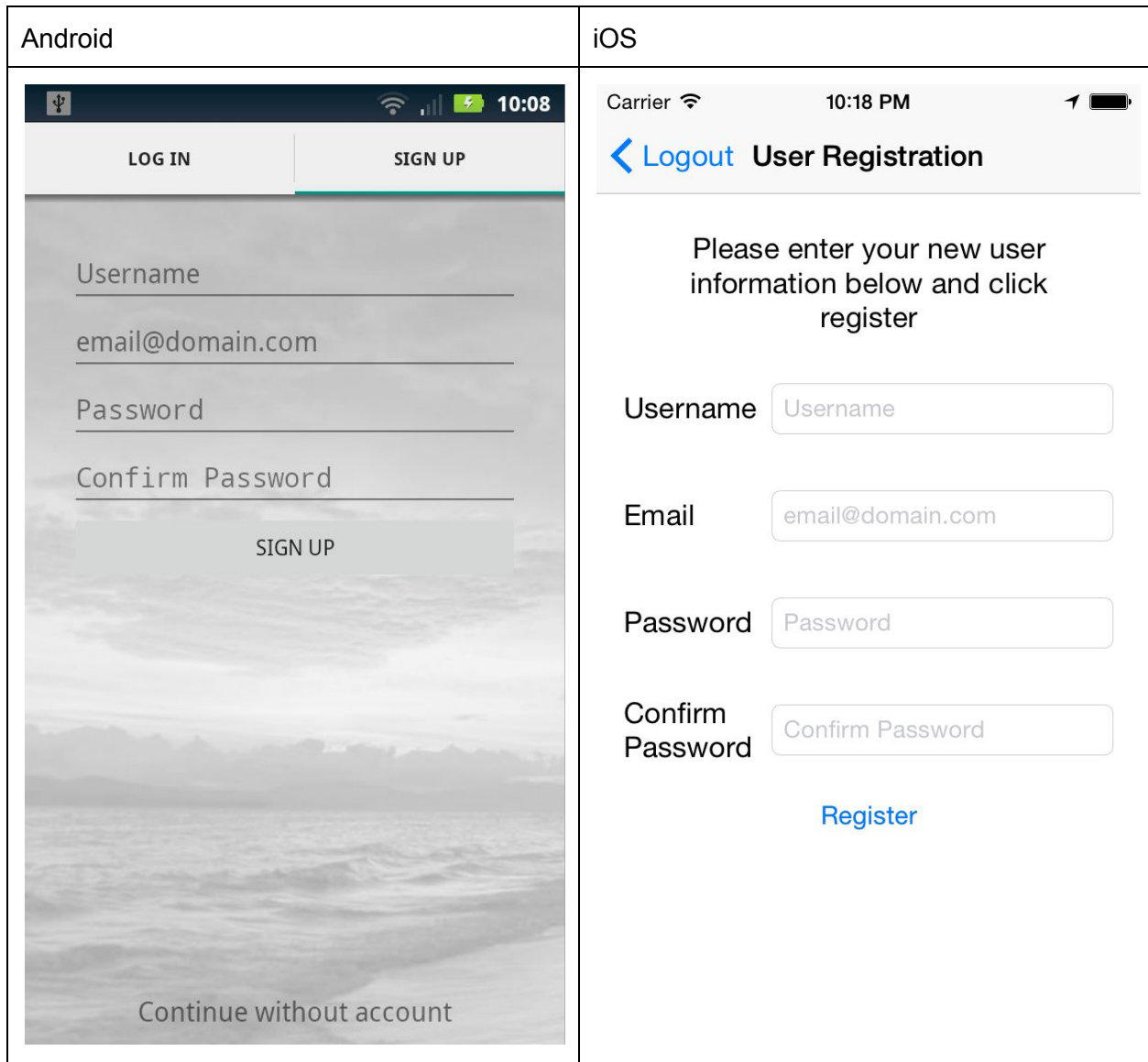
After completing the download and installation, you will be prompted to Login or Sign up when you open the app for the first time. **Registration is required** using the simple Sign up form provided. *Please note that this process requires an internet connection (wifi or cellular) to complete.*

Sign up
Follow these instructions if you have not previously registered with Lake Observer:

1. Select "**Sign Up**" from the login screen.
2. Fill in the form, including your username, email address and password. For your username, be sure to select something you are comfortable having displayed with data you collect. For example, the Lake Observer website has a "Recent Observations" feed on the Home page which displays usernames.
3. After filling in the form, select "Sign up."
4. You will see a pop-up message instructing you to check your email for a confirmation message. **Go to your email inbox to check for a message from Lake Observer (be sure to check junk mail, too) and follow the link.** This step is essential for completing the user registration process. If you don't receive a confirmation message within 5-10 minutes, Contact Us.
5. After completing these steps, you will now be able to login to the app (see Login instructions below) and website (see User Profile instructions below).

Here is what the Sign Up (User Registration) screens looks like:

Android	iOS

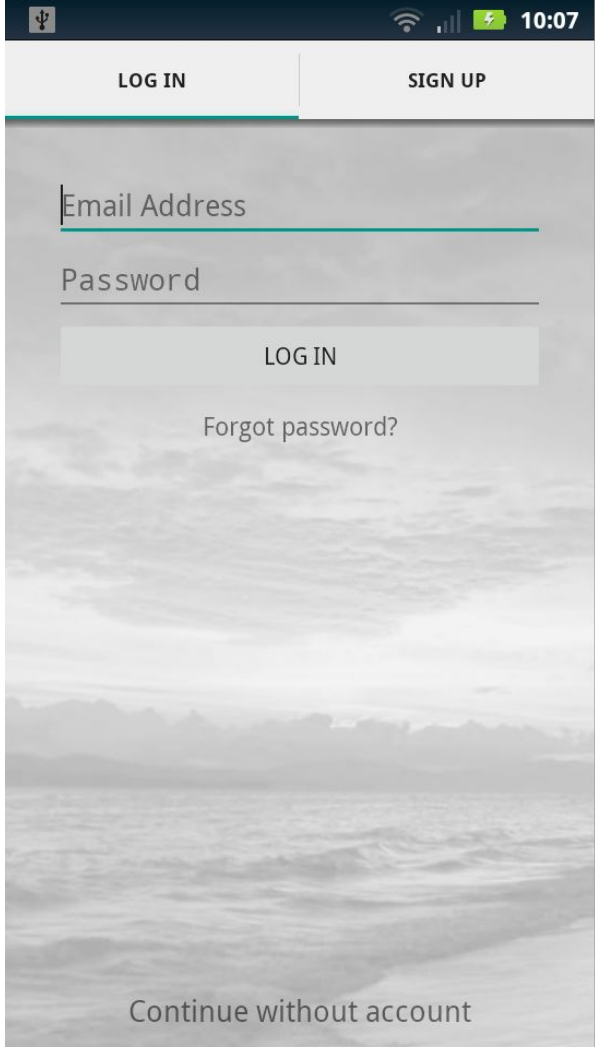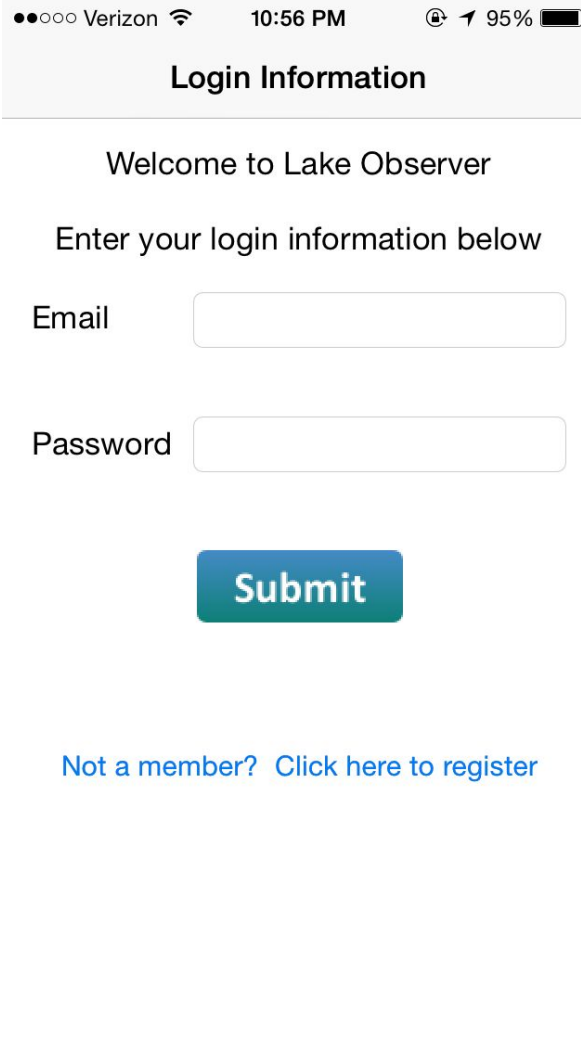You can also use the website Sign Up form.

Login
After signing up and creating a user account, you can login to the app. *This step should only be necessary the first time you login or after uninstalling/reinstalling the app on your device; however, you may be asked to login again from time to time.*

1. At the **Login** screen, enter your username or email address and the password for the account created (see Sign Up above).

2. Select "Login" and you will be taken to **Water Body Information** screen and be able to start using the app to record lake and water observations (see **Data Entry** below).

Here is what the Login screen looks like:

Android	iOS
Android	iOS

User Profile

App users can set-up and manage a user profile. **This step is optional, but we are strongly encouraging all users to fill out a user profile.**

1. Login to the **Lake Observer** [website](#) using the user account you created (see **Sign up** above).
2. In the Navigation bar on the upper right-hand side of your screen, you will see an icon with your username displayed. Hover over the icon to display options and click on "Profile."
3. On the "Edit your settings" screen, select the **Basic Settings** tab (this is the default).
4. Enter your First Name and Last Name.
5. Select a level of expertise based on the category that most closely matches your experience level:

   Research Scientist - professional researchers, academics and monitoring staff working with universities and agencies on lake or water research projects.

   Citizen Scientist (trained volunteer) - volunteer research and monitoring staff and lake association members who have received training in collecting water quality data.

   Lake Enthusiast - anyone who enjoys lakes and wants to participate in a global crowdsourcing data collection effort. The app includes screens for more basic weather, ice and water quality observations, such as lake temperature, that don't require any special equipment, but these data are important observations for lake research.

6. Enter the name of your **Organization**, for example, Global Lake Ecological Observatory Network (GLEON), and hit enter or tab. You can enter more than one organization. If the organization is already in our database, the field will autofill as you begin typing.
7. Under the **Personal Settings** tab, you can edit your username, email address and password.

Here is what the User Profile "edit settings" looks like on the website:

Forgotten Password

Use the "Forgot Password" link on the login screen and follow instructions to reset your password.

Data Entry:

After completing the sign up and login process, data entry can be completed while offline and not connected to the internet, as long as your location services are enabled. We strongly recommend enabling the highest precision location options including the GPS and cellular options to maximize precision. Data will be stored locally and can be submitted when you reconnect to the internet.

Establish Your Location

When you first open the app and enter your login information, you will be asked to provide information on the location of your sample. *Note: You can only enter one location at a time. To change your location, see* **Change Location** *(below).*

1. Enter the **Water Body Name** (e.g., Lake Sunapee) and **Site Name** (e.g., boat harbor).
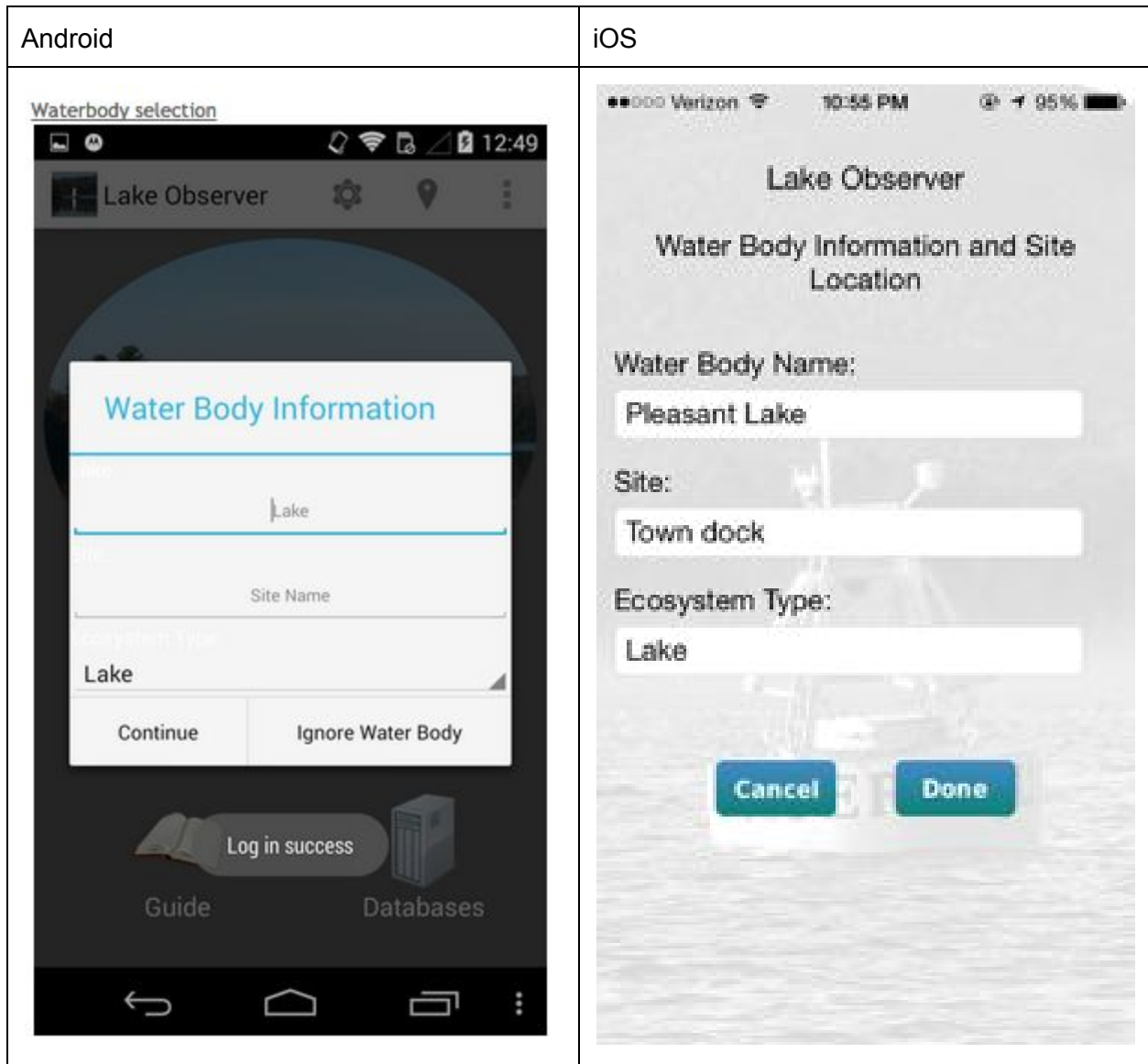2. Select the appropriate **Ecosystem Type** and click Done.

Here is a description on how to correctly populate the requested information:

Water Body Name: This is the name of the water body where the participant is taking making an observation.

Site Name: This field refers to the site name or site number for the area where the participant is making an observation. This is not required but is helpful if there are sites that are repeatedly visited.

Ecosystem Type: This field refers to the water body type. The choices are: Lake, Reservoir, River/Stream, and Wetland.

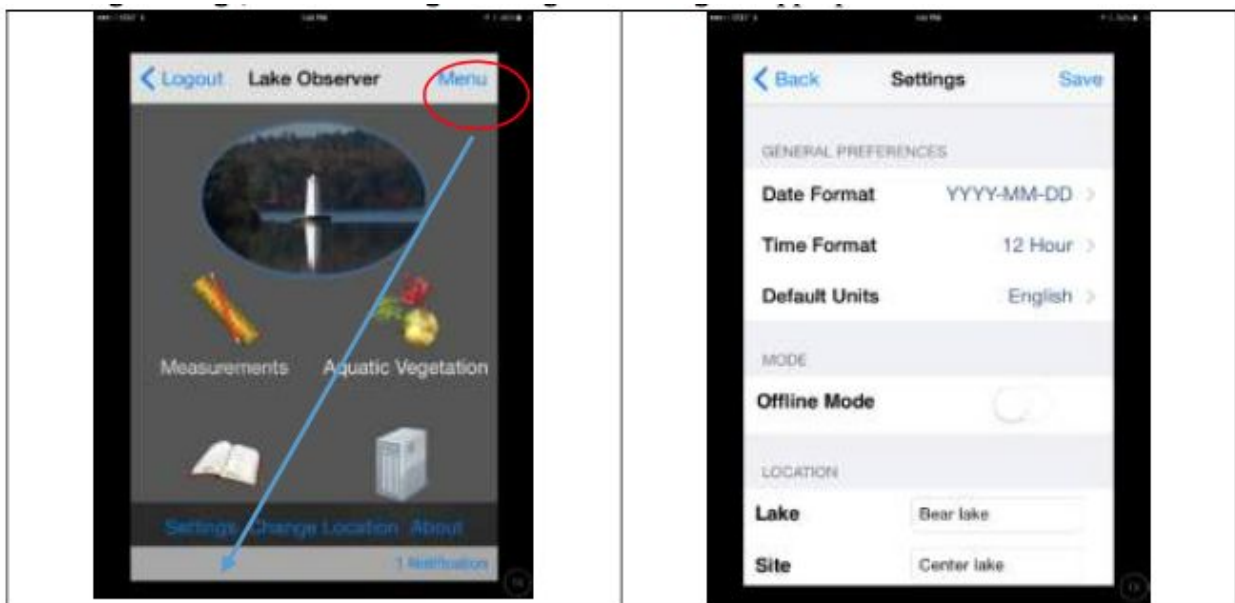Here is what the **Water Body Information** screen looks like:

Android	iOS

Settings

The app allows you to change setting such as Date Format, Time Format, Default Units and Mode. Below are instructions on how to change **Settings** in the app

1. From the app's home screen, select Menu--> Settings (iOS) or click on the settings gear icon in the top right of the screen (Android). Change the settings as appropriate. *Please note that "Developer Mode" (iOS) is for app developers only. If this mode is selected, data will not be entered into the Lake Observer database.*
2. From the app's home screen, select Menu. The Menu will appear on the bottom of the screen. To change settings, choose Settings. Change the settings as appropriate.

Here is what the Settings screen looks like (iOS version example):

Change Location

The app allows you to change locations. Below are instructions on how to change your location.

1. On the iOS home screen, select **Menu**, and when the Menu appears at the bottom of the screen, choose **Change Location**. This can also be done from the Submit menu on a data entry screen.
2. For Android, selecting the back button repeatedly will bring up the Location Screen when you get all the way to home screen or it can be found from the upside-down tear drop marker (of the style in Google Maps) in the upper right corner of any data entry screen.
3. For either system, update the location using the instructions found in the "**Establish Your Location**" section of this document.
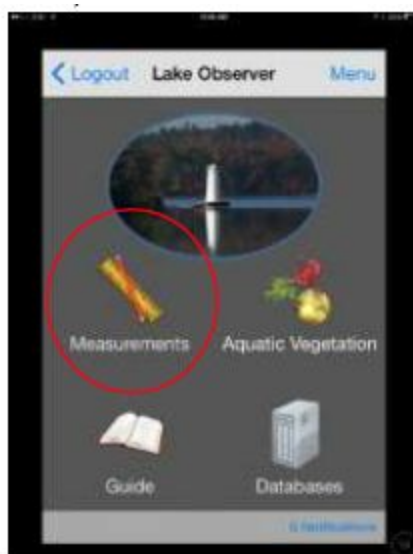
Measurements

This section of the guide explains how to enter and submit your lake and water quality observations using the app.
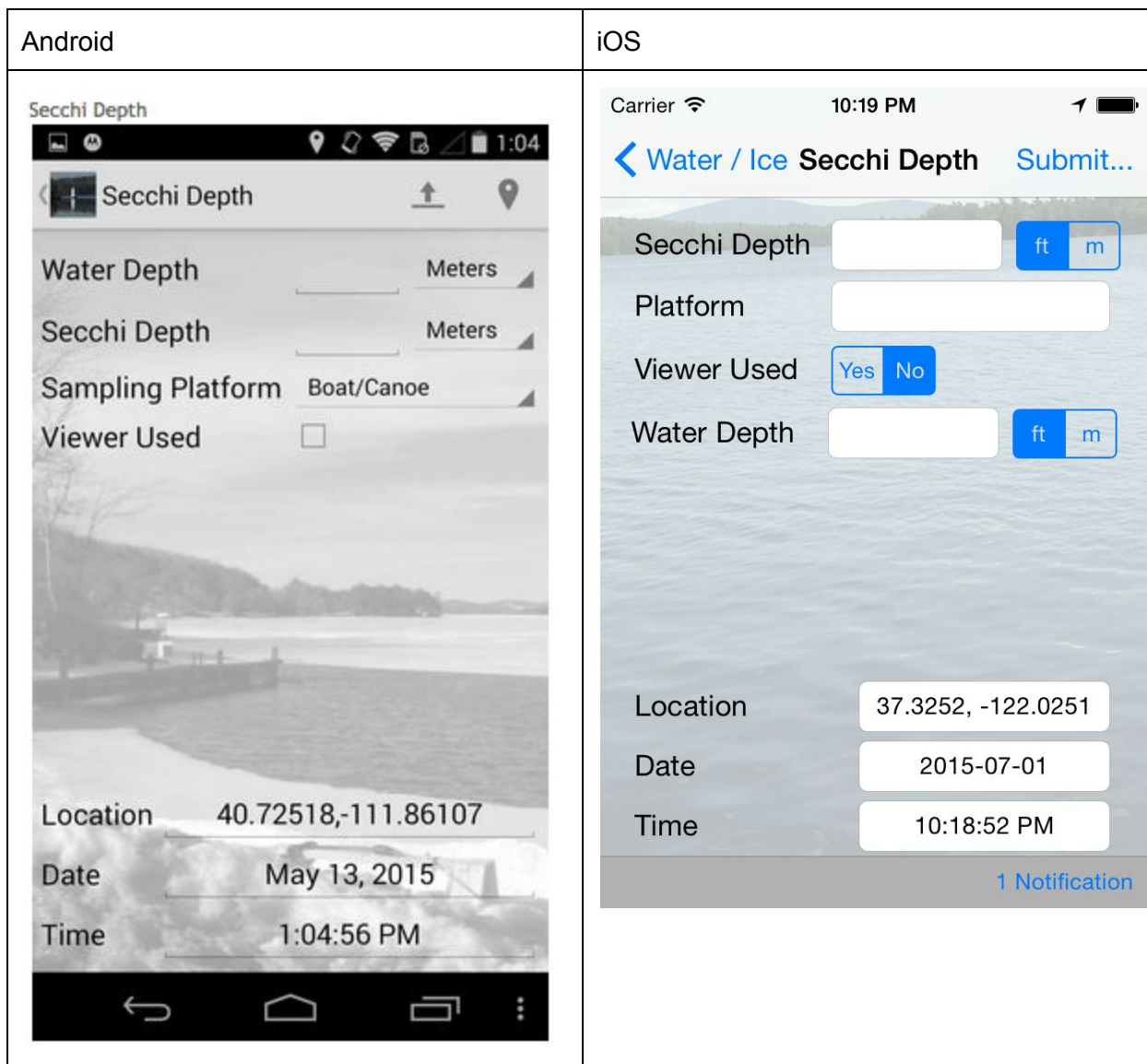
Water/Ice

Secchi Depth

Follow the directions below to capture and submit your Secchi Disk reading. *Please note: You can enter and submit water measurements in any order. For purposes of this guide, we begin with Secchi reading, then other water quality measurements, and finally weather information.*

1. From the app's home screen, select **Measurements** (iOS example):

2. Select the **Water/Ice** option and then the **Secchi** option. This will bring you to the Secchi Screen. The graphic below shows this screen and provides information on how to correctly populate the requested information. *Note: for unit measurements, when you record Meter you are recording meters and tenths of meter. When you record feet, you are recording feet and tenths of feet (see Conversion Table below).*
3. When you have reviewed your data, you can submit it. See **Data Submission** instructions (below).

Android	iOS

Description of Secchi data fields:

Secchi Depth: Enter the Secchi Disk reading, and make sure to choose feet or meters. Remember that if you are entering data in feet, you will need to submit fractions of feet as tenths, not inches (see the **Conversion Table** below).

Water Depth: This field refers to the total depth of the water body. This is the only screen where you can provide the water depth at your sampling location. Make sure to check either feet or meters. Remember that if you are entering data in feet, you will need to submit fractions of feet as tenths, not inches (see the **Conversion Table** below).

Inches to Decimal Feet Conversion Table:

Inches	Decimal Feet
1	0.08
2	0.17
3	0.25
4	0.33
5	0.42
6	0.5
7	0.58
8	0.67
9	0.75
10	0.83
11	0.92
12	1.0

Platform: This field refers to "The reading was taken from field (Boat, canoe, etc)." The choices for this field are: Boat/Canoe, Dock/Bridge, Wading or Other. Select the appropriate value.

Viewer Used: If you are using a view scope you can capture that information here by clicking on Yes.

Water Quality

Follow the directions below to capture and submit results for water quality parameters.

1. From the app's home screen, select **Measurements**.

2. Select the **Water/Ice** option.

3. Select **Water Quality**. This will bring you to the Water Quality Screen. The graphic below shows this screen and provides information on how to correctly populate the requested information.

   Note: for unit measurements, when you record meter you are recording meters and tenths of meter. When you record feet, you are recording feet and tenths of feet. See Conversion table (above).

   Note: The app does allow users to submit data for multiple sampling depths. To submit data for multiple sampling depths, first fill out the screen for the first depth and click submit. Then fill out the water screen again for the second depth, submit data, and so on.

4. When you have reviewed your data, you can submit as described above in **Data Submission** (below).

Android	iOS

*Environment: This field refers to the area where the sample was taken. The app provides two choices: Near Shore or Open Water. Select the appropriate value.

*Sampling Depth: This field refers to the depth where the sample taken.

Temperature: This fields refers to water "Temperature at bottom and surface". Dip-In participants should use this field to capture the water temperature at the depth of the sample.
pH: For this field, only enter pH information if it was obtained from a probe in the field.

Turbidity: For this field, do not enter readings obtained from a turbidity tube.

Dissolved O2: Enter the DO reading.

> **Conductivity**: Enter the conductivity reading. Make sure to check the units you are using: mS or μS.
>
> **Chlorophyll**: Enter the chlorophyll reading.
>
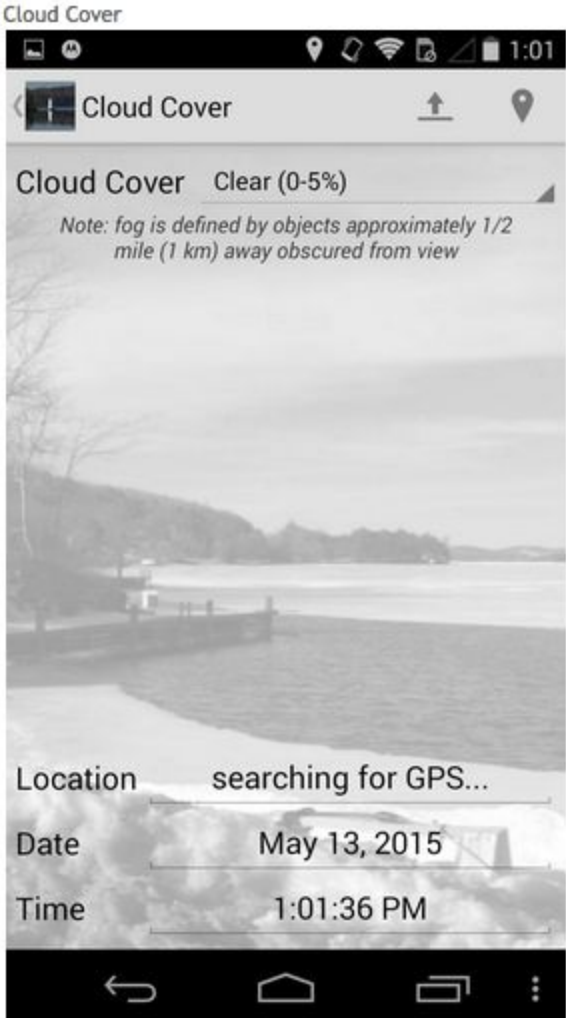> *** Indicates required field.**

Ice Cover *-- Instructions Coming Soon!*

Weather

Follow the directions below to capture and submit weather information.

1. From the app's home screen, select **Measurements**.
2. Select the **Weather** option. This will bring you to the Weather Screen where you can select screens to enter Wind direction, Air Temperature, Precipitation and Cloud Cover.
3. When you have finished entering your weather information, you can submit as described below in **Data Submission**.
4. Each weather category is entered separately. After you submit the data, select "Back" (iOS) or the back button (Android) to enter another weather category.

The graphic below (Android version) shows the screen for **Cloud Cover** and provides information on how to correctly populate it.

Android	
	Users are provided with pre-populated files for cloud cover including: Clear (0-5%) Mostly Clear (6-24%) Mostly Sunny/Pt Cloudy (25-49%) Pt Sunny/Mostly Cloudy (50-69%) Mostly Cloudy (70-89%) Cloudy/Overcast (90-100%) Fog (low clouds/limited visibility) Chose the appropriate value.

Aquatic Vegetation -- *Coming Soon!*

This section of the app is currently undergoing revision. Please check back soon for an updated version and user instructions for the following measurements:

- **Macrophytes**
- **Algae**
- **Metaphyton**

Data Submission

Each of the data entry screens described below captures the date/time and location (latitude/longitude) that the sample/reading was taken allows you to submit data. Here are the steps for submitting data after it has been entered and reviewed:

1. When you have reviewed your data, you can submit it.
    a. On the iOS version, click on the word "Submit" in the upper right corner of the screen. When the submission menu appears, click on Submit Entry. You can also confirm that your location information is correctly entered by clicking on Change Location from within the Submit menu.
    b. On the Android version, there is a horizontal line with an arrow (indicating "upload") in the upper right corner. When you click on it, the data will be uploaded. You can confirm your location by clicking on the location marker (upside down teardrop as is usually used in Google Maps) in the upper right corner of the screen.

2. If any fields are not populated you will receive an error. Make sure that you fill in the required fields and then resubmit your entry.

3. If you are connected, you should receive a message saying the submission was successful. If you are offline, you will receive a failure message, but the data will be stored locally for later submission (see #4). You can verify that your data were submitted by clicking on the Notifications link (bottom of the iOS) or visiting the Database screen from the home screen (Android).

4. If you are offline or in a place with no cell coverage when you take your reading, make sure to go to the Database screen from the home screen and submit your entries when you are back in a place with cell or wi-fi service.

5. Select "Back" (upper left, iOS) or use the back button (Android) to navigate to other screens to enter measurements at each site (e.g. Secchi depth or other water quality measurements) or to enter weather information.

Search and View Data

Submitted data can be searched and viewed on the Search page. There is also a Recent Observations feed on the Lake Observer Home page.

We appreciate your feedback!

Please Contact Us to provide feedback about using the app or to report bugs.

FAQs>Getting Started

Is login required every time I use the app?
No, the app will remember your login details, and this should only be necessary the first time you login or after you uninstall/reinstall the app for any reason.

Can I use the app without registering?
Yes, you can use the app and collect data without registering, but you won't be able to submit data until you register and login using the app. For unregistered users, data are stored locally on the device until you register. After registering, see the **Databases** section of the app to view/submit any locally stored data.

What if I forget my password?
There is a "forgot password" link on the login screen that will provide instructions on resetting your password.

Can I collect data without being connected to the internet?
Yes, the app allows for collecting data offline as long as the GPS radio on your device is enabled while working offline. Data will be stored locally and can be submitted when you reconnect to the internet.