WxLink User Manual

Version 1.0.1

September 1, 2012

Overview

This WxLink weather application works in conjunction with both ET Basic and ET Standard software applications from Gwytech Systems Inc. Its purpose is to retrieve the latest evapotranspiration and rainfall data from the WLK file generated by WeatherLink from Davis Instruments. This weather data is then used by ET Basic/Standard which in turns tracks moisture losses from evaporation and transpiration as well as gains in soil moisture from rainfall and irrigation. This like all of our weather applications are to be used only with products (hardware and software) by Gwytech Systems Inc. or those that are licensed by Gwytech Systems Inc.
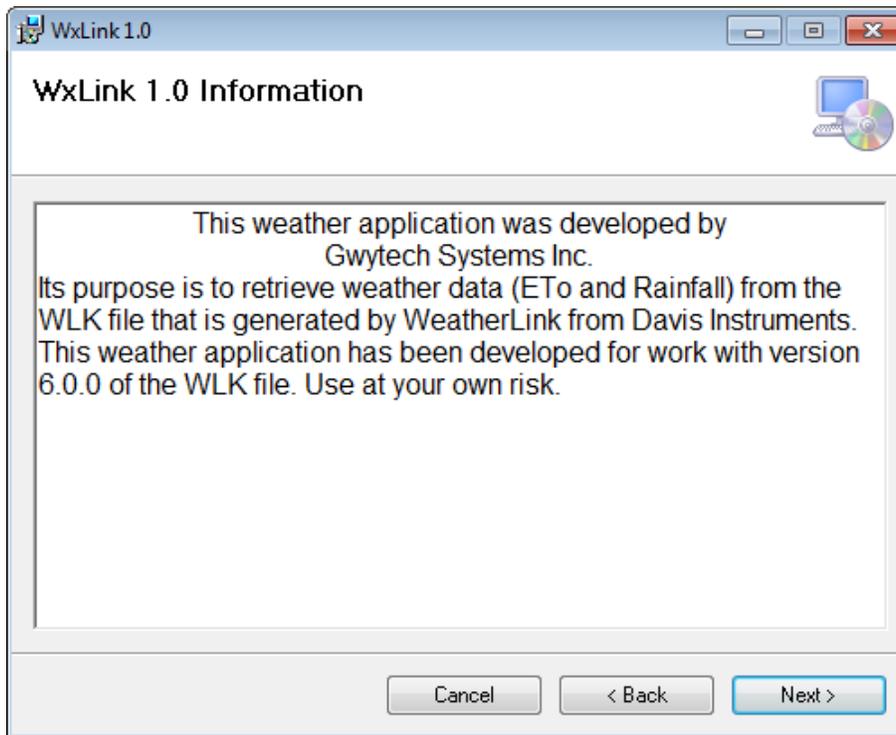
Installation

It is assumed that the ET Basic or ET Standard software has already been installed on your computer. Below are shown the steps necessary to install this weather application once it has been downloaded from our website at http://www.gwytech.com/downloads

Find the location that this weather application was downloaded to then double click on it to open up the compressed folder. Inside the folder you will find the WxLink Setup.msi file. Double click it to start the installation process. You may need to give this application elevated permissions in order to install it on your computer.
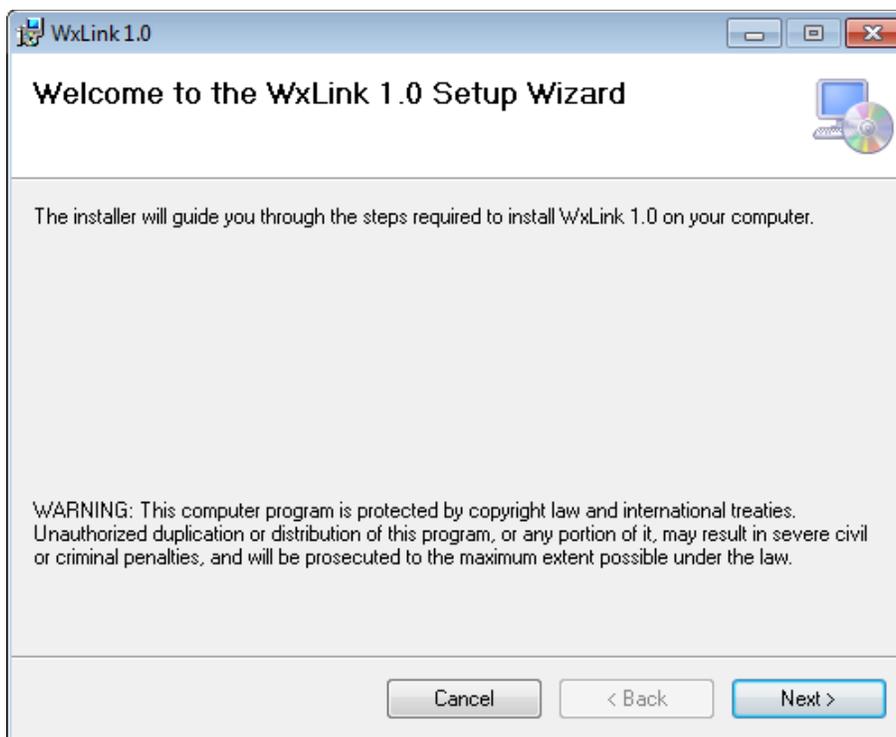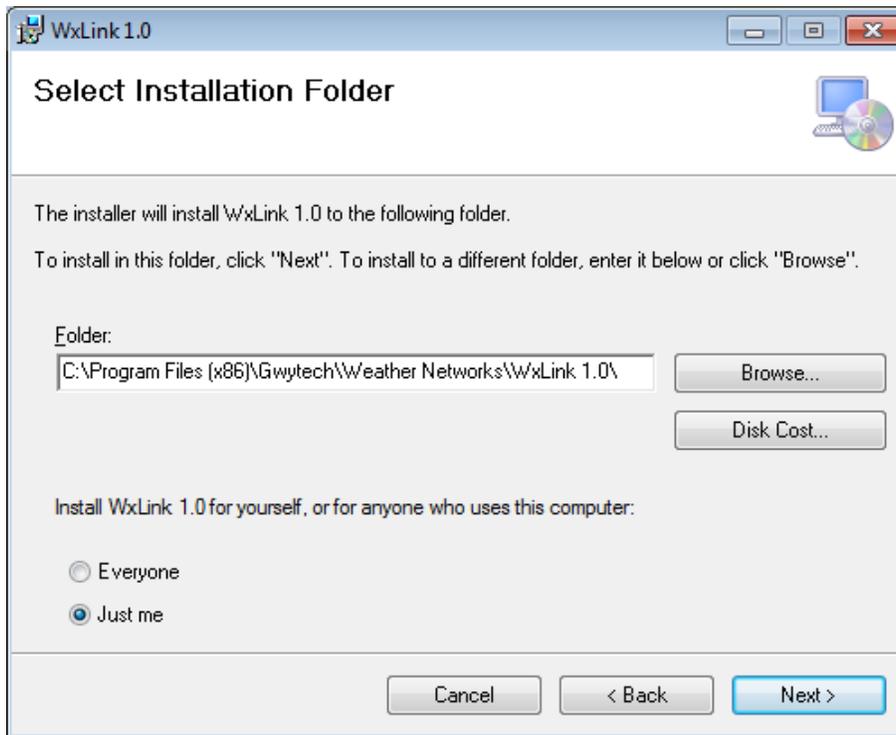

This is the Setup Wizard that needs to be followed in order to install this software.

Next screen is some basic information about this weather application. Select Next to continue.
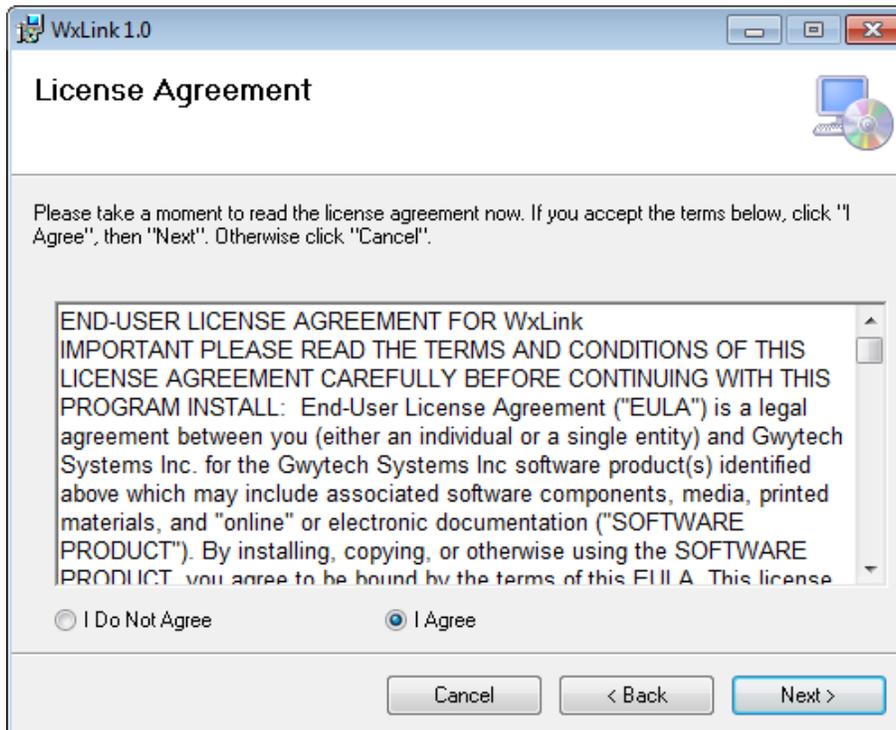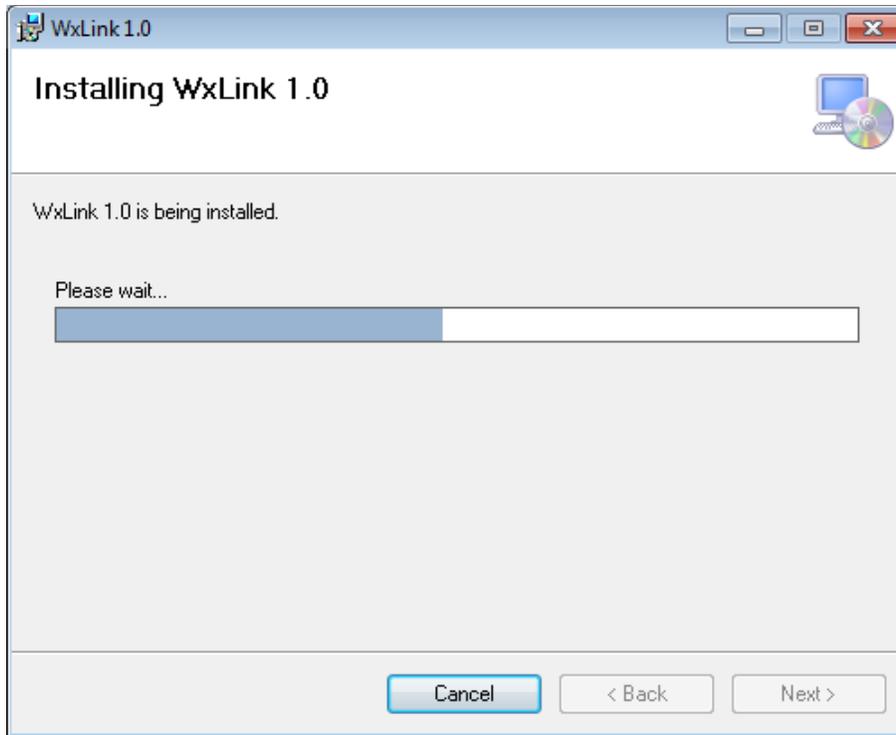

Now the license agreement, select I agree then next to continue.

Here you can change the installation directory and disk drive. You should leave the defaults. Its best to allow only one person access to this application. Select Next to continue.
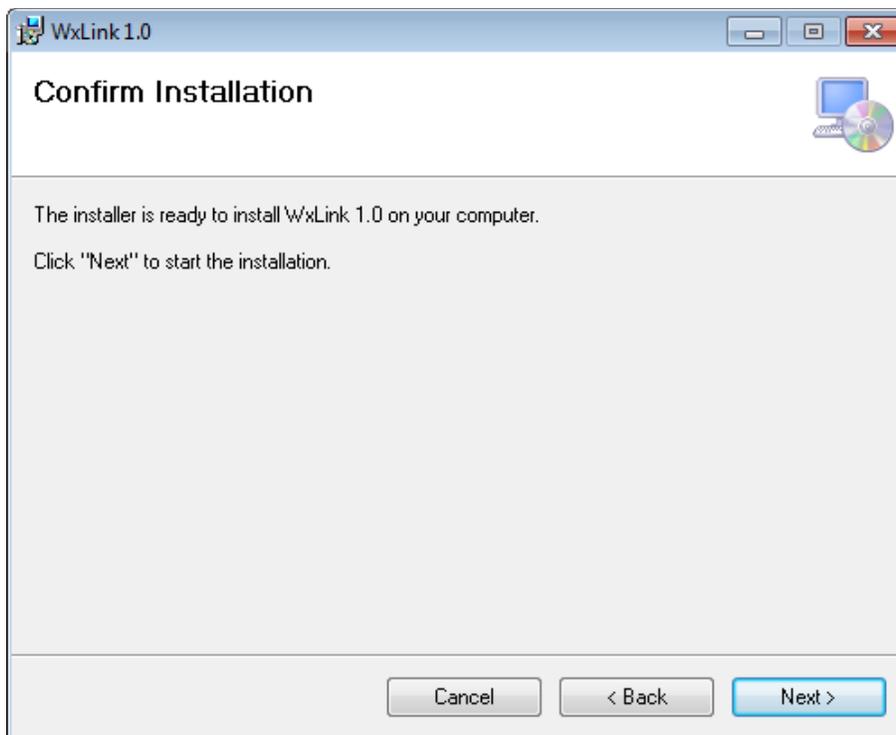
This step is just to confirm that you do want to install this weather application. Select Next to continue.

This screen shows you the process of the installation. It should not take long unless your firewall is preventing it from installing.
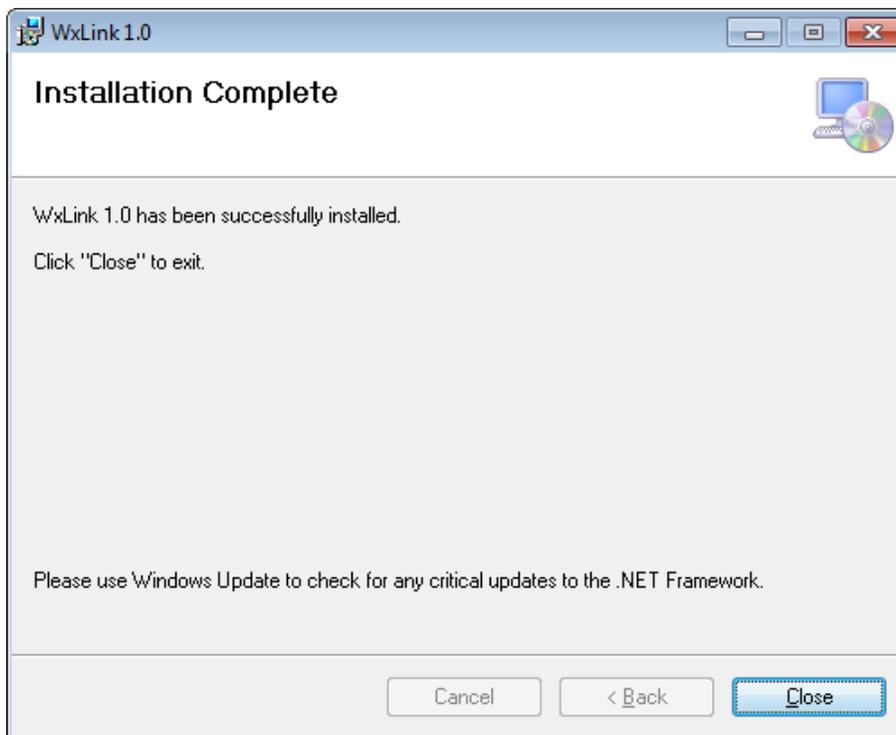
Once the installation has finished this is the screen that you will see.

This weather application will not have an icon on the desktop or be accessible from the start menu. These applications are executed (run) by the ET Basic application as a console application. Their purpose is to retrieve weather data for ET Basic/Standard from a local hard drive or the Internet. So, you may need to have a Internet connection that is always on.

Configure and Using Weather Application

In order to use and configure this weather application it must be loaded from the ET Basic software application. The ET Basic application should have already been installed. Open the ET Basic application. Click the Irrigation Setup button and then the Open File button (see screen below). This brings up a window to allow you to select your weather application. You will need to go to the directory that has the weather application that you just installed. If you left the default settings it will be at Gwytech\Weather Networks\ from here select the name of the weather application you installed. See ET Basic or ET Standard User Manual if you need more information.
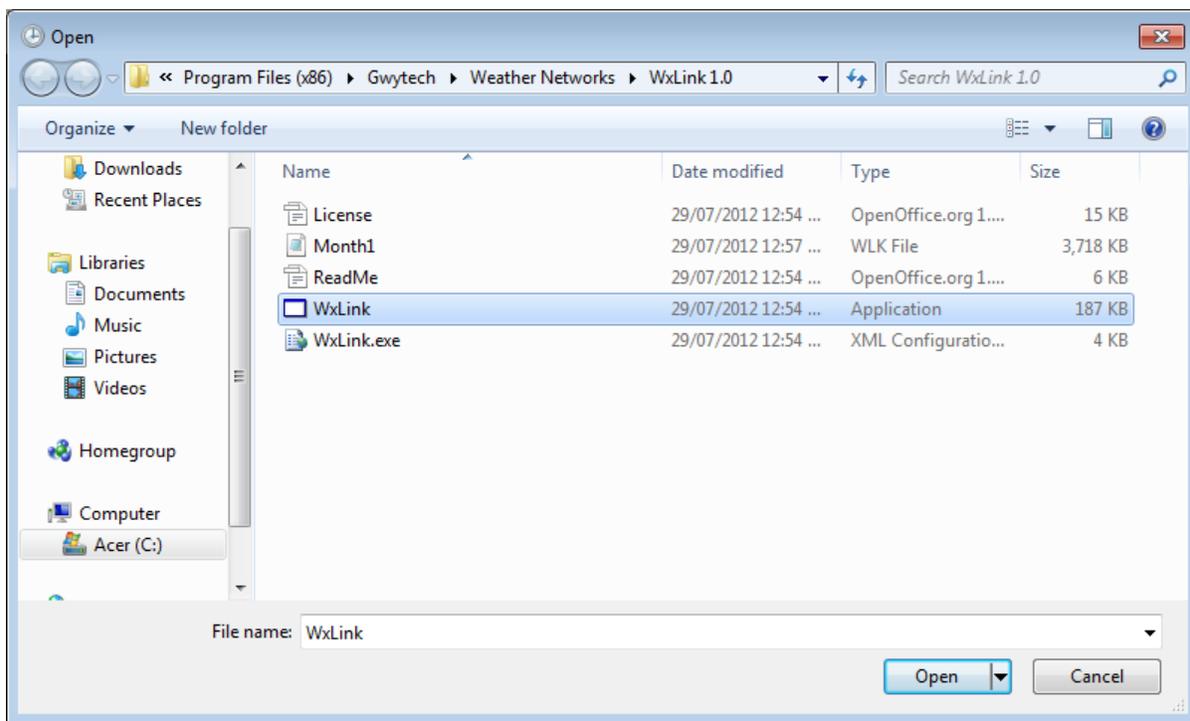
Select the name of your weather application (WxLink). **Note**: select the Type application not the XML configuration File. Then select Open. Now save setting in the ET Basic or ET Standard application. To configure this weather application click on the Setup Weather Network button. You should see a screen similar to below.
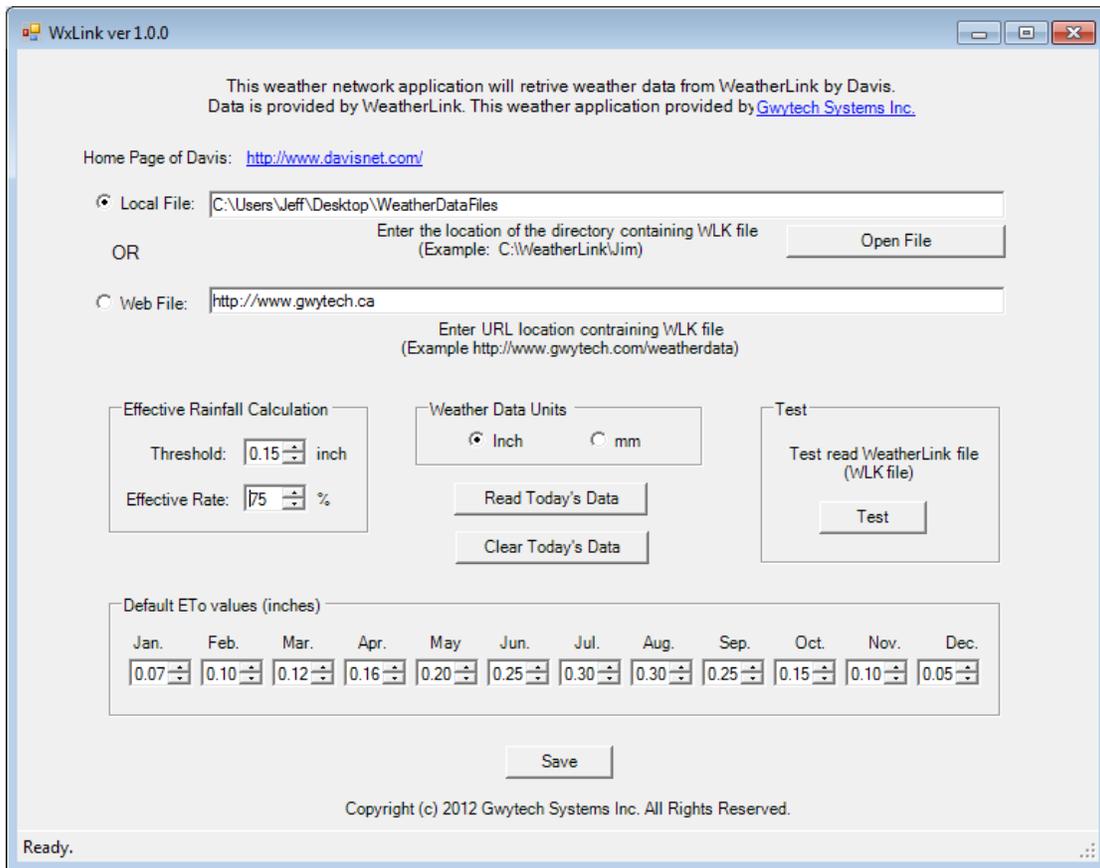
Setting up WxLink

     This weather application is a little different then most other weather application that have been developed by Gwytech Systems Inc. Most retrieve daily weather for the day before. This weather application will retrieve that latest data that is available in the WLK file that is generated by the WeatherLink software by Davis Instruments. It had been developed using the latest version (6.0.0) at the time of WeatherLink. Don't be confused with the WeatherLinkIP, a web based version that uploads weather data to Davis's server and will not work with our current WxLink weather application.

     The purpose of this weather application is to retrieve the latest weather data that will be used by ET Basic or ET Standard version of our smart irrigation software. Typically this is done on a daily basis everyday at the same time. So, instead of having data for the previous day you will have data that is up to the last time the WLK file was updated. Data is still every 24 hours but will be from the same time from one day to the next. For example, if thing are setup to retrieve data at 11am then data from 11am the day before until 11am today will be retrieved. Note: The very first time this weather application runs it will get the total data for the day before and any additional data since midnight. The next time that it runs it will get the data for the latest 24 hours since it will already know the data since midnight the day before and it will adjust for this.

     To set things up you need to select a location that will contain the WLK file that is generated by WeatherLink. Normally this would be your hard drive or can be the Internet if the WLK has been uploaded to the server. You will need to select local file or web file and give its location. Only the

directory is required without a file name as WeatherLink generates the file name based on the date. Every month a new file is started and is in the format 'YYYY-MM.wlk'. For now select inch for the weather data units. Only inches are currently supported in this version. Now, effective rainfall parameters need to be setup. Our ET based software uses effective rainfall in adjusting moisture levels in the soil and not rainfall. This is due to the fact that not all rainfall gets to the roots of the plants. Typically there needs to be a minimum amount of rainfall before it becomes effective. This is called the threshold level. Anything thing below this isn't counted and anything above this level is. Any amount of rainfall over this threshold level is adjusted for runoff and deep percolation. Depending on your location and soil type, all of your rainfall may not get to the roots. So to help adjust for this there is the effective rate that needs to be set. Any rainfall over the threshold is adjusted by this effective rate value. In order to set up the effective rainfall calculation you must set the threshold rate that is typically 0.10 to 0.15 inches and the effective rate which typically is set at 75%. These values can be change depending on your location and the amount of rainfall that you think you are getting to the roots of the plants. If you want effective rainfall equal to rainfall then set threshold to 0.00 inches and effective rate to 100%.

If there is a problem WxLink can use default ETo data instead of the actual data. These are monthly averages based on previous year(s) and are dependent on your location.

NOW click the SAVE button to save the settings for WxLink.

The 'Read Today's Data' button will display the data that is saved from today (since midnight) and is used to adjust weather data internally within WxLink. This is needed so that data from the last 24 hours is used and not daily data that ends at midnight. There will only be data if this weather application has already run from within ET Basic or ET Standard. This is something that ET Basic/Standard does automatically when acquiring weather data. The 'Clear Today's Data' button will reset (clear) any data from the day before. When WxLink first runs it won't have today's data that is needed to make adjustments. This will result in data values being higher because it can't adjust for the extra data since midnight from the previous day. Now, if WxLink retrieves data shortly after midnight its possible that the data values will be zero. This is due to no water loss (ETo) and rainfall not having occurred yet.

The TEST button will test read the WLK file(s) and display yesterday's data along with any data for today. These will be the same data values if WxLink was run by ET Basic/Standard. On the first of every month two different WLK files are used as the data required are from two different months. So, when using WxLink the first time you should make sure the data file is still in place for the previous month.

If you want to run WxLink by itself it must be run from the command prompt. It can be run with the command 'wxlink.exe f' to bring up the Window's form like the one above or when setting up weather network from within ET Basic/Standard. Run it with the 'i' switch 'wxlink.exe i' the i switch runs it in imperial mode and will generate a file called data.txt in the directory that contains the WxLink application. The data.txt file format is 'YYYY-MM-DD,ETo,Rainfall,Effective Rainfall,Code' and a new file is generated each time the WxLink is executed with the i switch.

Example data.txt from September 1, 2012. Note that the date is always one day behind, data is in decimal and code is a integer.

2012-08-31,0.1040,0.2200,0.0525,1