

EDEN xyLocator Tool (v. 2.0.1)

User's Guide

Updated November 6, 2012

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What is the EDEN xyLocator?

EDEN xyLocator is a program for extracting data from EDEN daily water level surfaces and the ground elevation surface. Data is extracted for user-specified x,y locations for water level, water depth, and ground elevation, and days since last dry (counting from the user-specified time range). All EDEN surfaces are gridded to 400-meter by 400-meter cells; therefore the data extracted for the x,y location corresponds to the data for the grid cell in which the x,y location occurs. All water-level and ground-elevation data are output in user-specified units to North American Vertical Datum of 1988 (NAVD88).

For your information:

At the beginning of the user-specified time period, the value of the days since last dry at all grid cells is set to null or 'no data'. Once the grid cell becomes dry for the first time, the computation of days since last dry starts, therefore it is feasible that some grid cells may never become dry during the period and have no value for the days since last dry computation.

Installation Instructions

Prior versions of the xyLocator required the user to download NetCDF .dll files and the .NET Framework. This is no longer required, as the latest version of the xyLocator is Java-based. All necessary files are included in the zip file (see below), except for the Java installation. **Users will need to have 32-bit Java installed on their system before they can run the xyLocator.**

Required for execution of the program:

- 1. EDEN xyLocator zip file** (currently at 2.0.1)

Available for download at

<http://sofia.usgs.gov/eden/edenapps/xylocator.php>

Zip file can be saved to any location on your computer. Note: we recommend NOT using the Windows extractor to unpack the .zip file containing the xyLocator, as the Windows extractor has trouble with complex zip archives and long path names. We recommend using WinZip or 7zip.

- 2. JavaSE-1.6**

Download from <http://www.java.com>

Users will need to have 32-bit Java Virtual Machine (JVM) installed on their system before they can run the xyLocator. The 64-bit JVM causes issues with the xyLocator, so if you are running a 64-bit system, please ensure you have the 32-bit JVM installed, not the 64-bit one.

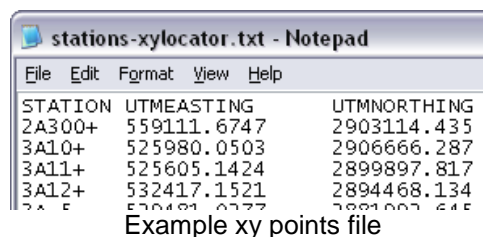
User Input Files

Required files:

1. EDEN DEM file for ground elevation
 - a. NetCDF file format (.nc)
 - b. Units of centimeters
 - c. Available for download at
<http://sofia.usgs.gov/eden/models/groundelevmod.php>

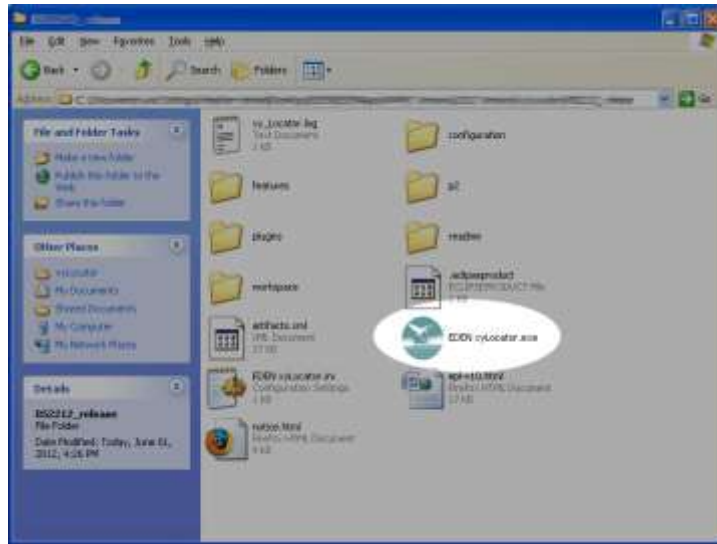
2. EDEN daily water-level surfaces
 - a. NetCDF format file(s) (.nc) containing daily water level surfaces
 - b. Multiple one-quarter-year files can be used for requested time series (be sure that continuous data files are present for accurate time series calculations)
 - c. Available for download at
<http://sofia.usgs.gov/eden/models/watersurfacemod.php>

3. xy points files (see example screenshot below)
 - a. Plain text file (ASCII or Unicode)
 - b. Tab- or comma-delimited
 - c. Header row required
 - d. Each row contains point positions for which EDEN data will be extracted. Each row contains, in order:
 - i. Position name
 - ii. X coordinate (UTM, zone 17N, NAD83), in meters
 - iii. Y coordinate (UTM, zone 17N, NAD83), in meters

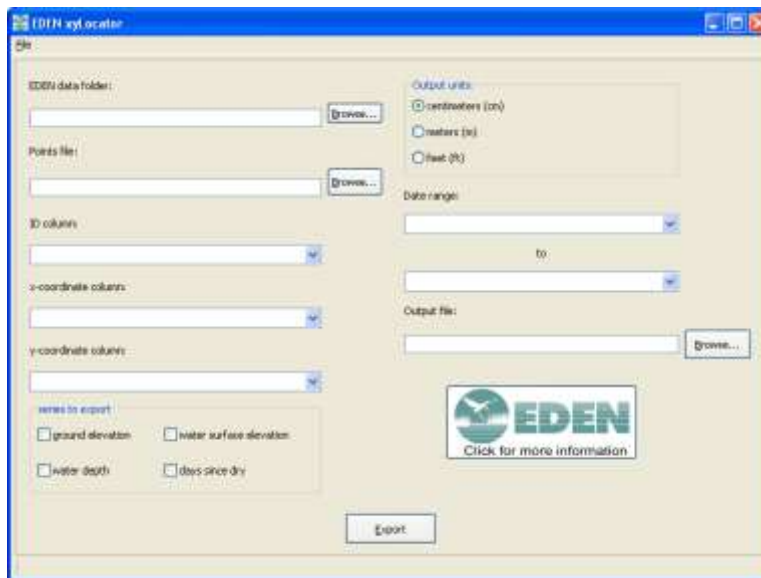


User Instructions

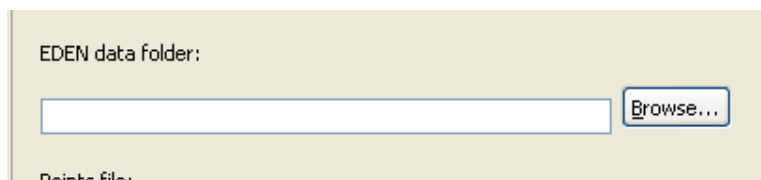
1. Open the application. To do this, navigate to the application and double-click on the application icon.



The application will open to the following window.



2. Type the folder path to the EDEN data files stored on your hard drive. This folder must contain one or more EDEN daily water level surface files (netCDF, .nc) and the EDEN DEM file for ground elevation (netCDF, .nc).



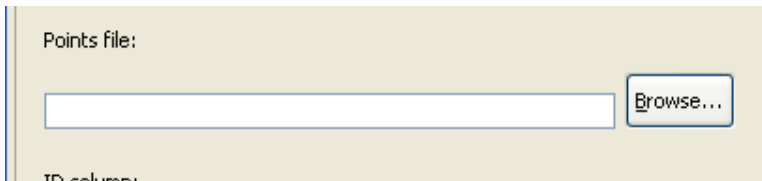
Alternatively, you may click the browse button and browse to the appropriate folder.



EDEN data folder:

Points file:

3. Type the file path to the file containing the point data you want to extract. (See the example xy points file in the “User Input” section above.)



Points file:

ID column:

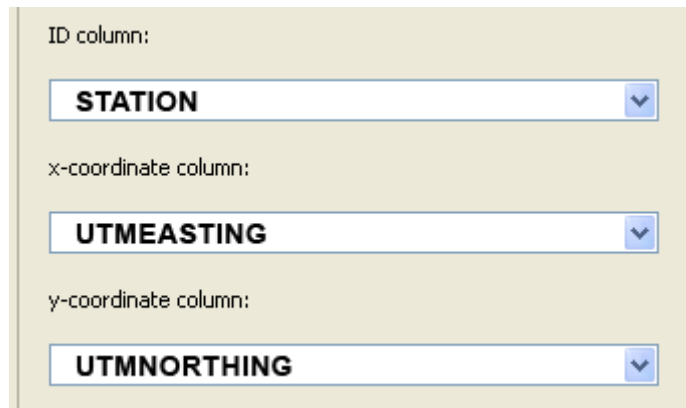
You may also browse to this file. Simply click the browse button and select the appropriate file.



Points file:

ID column:

4. Fields from the points file will auto-populate the next 3 fields. Verify that the data are correctly being read by the program. You can reselect the correct column by using the drop-down menu.



ID column:

x-coordinate column:

y-coordinate column:

5. Select the data you want to export.

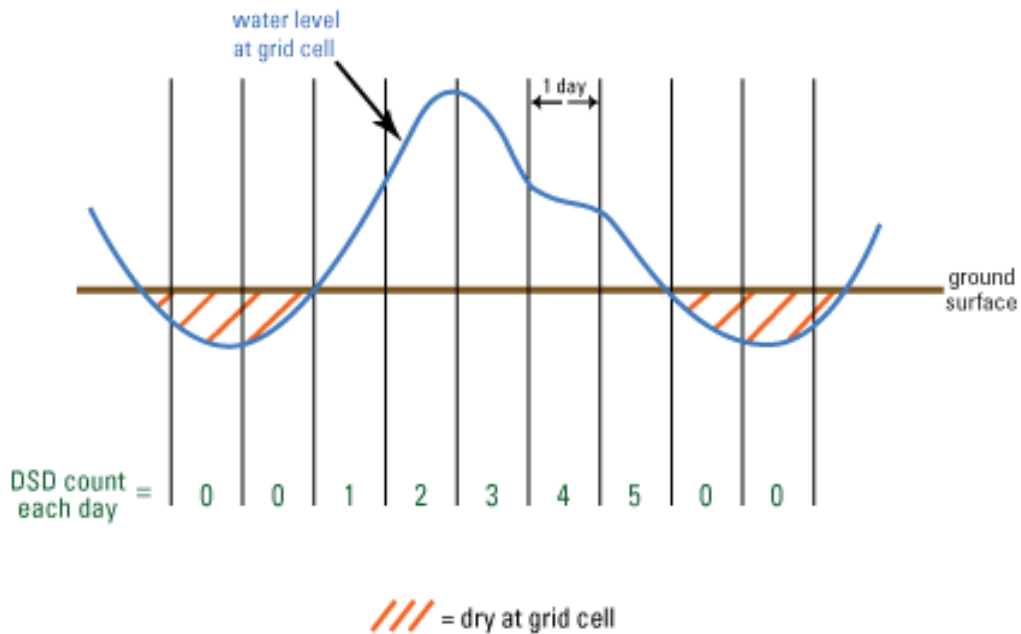
- **Ground elevation** will extract the ground elevation for the xy points from the DEM of the ground surface.
- **Water surface elevation** and **water depth** extract time series of water level (NAVD88) and depth for the xy points for the user specified period, respectively.
 - a. **Days since dry** generates a time series for each xy point that indicates the number of consecutive days that an EDEN grid cell surface has had a depth value greater than zero. The count of “0” indicates that the cell is dry (water depth is equal or less than zero) for that day. When the cell becomes wet (water depth is greater than zero), the count begins, and increases each wet day until a dry day is encountered. When the cell dries, the count returns to zero and remains at zero until the cell is wet again (see example below).

At the beginning of the user-specified time period, the value of the days since last dry at all grid cells is set to null or ‘no data’. Once the grid cell becomes dry for the first time, the computation of days since last dry starts, therefore it is feasible that some grid cells may never become dry during the period and have no value for the days since last dry computation.

Days Since Last Dry Calculations

The daily surface of water depth is created by subtracting the ground elevation for the EDEN grid cell (400-meter by 400-meter cells) from the water level surface. The days since last dry indicate the number of consecutive days that an EDEN grid cell surface has had a depth value greater than zero. The count of "0" indicates that the cell is dry (water depth is equal or less than zero) for that day. When the cell becomes wet (water depth is greater than zero), the count begins and increases each wet day until a dry day is encountered. When the cell dries, the count returns to zero and remains at zero until the cell is wet again.

Note that the output for the xyLocator Tool will display “no data” for a day until it reaches a count of “0”. Some stations may only report “no data” if they never encounter a dry day during the dates selected.



For example, a count of 3 means that the cell has been wet for the last 3 consecutive days or, said another way, the cell was dry 3 days ago.

You may select any or all series for export.

series to export

ground elevation water surface elevation

water depth days since dry

6. Select the units of measure for the output file. The available selections are centimeters, meters, and feet.

Output units:

centimeters (cm)

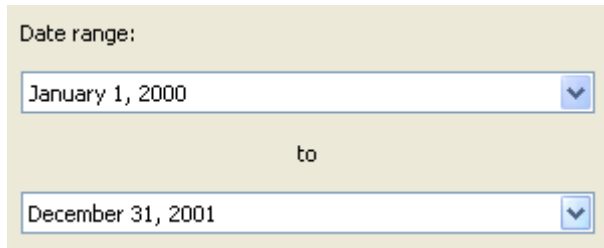
meters (m)

feet (ft)

7. Select the date range for export. The information in the **date range** will auto-populate from the dates contained in the water surface files in the data folder. If there

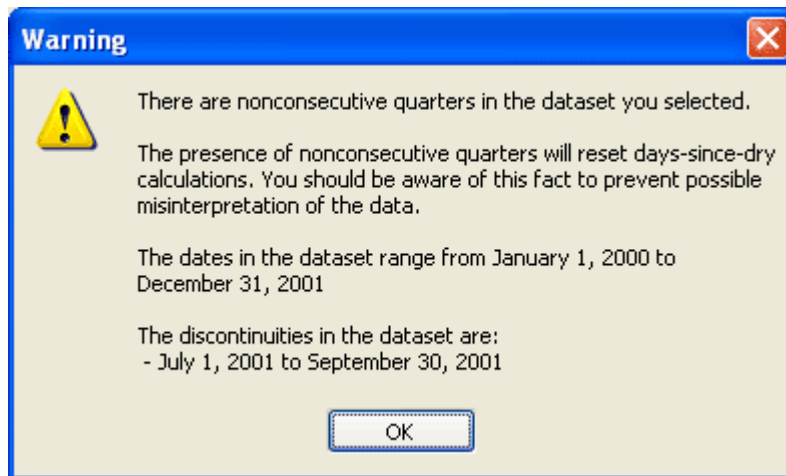
are multiple water-surface files, then the dates will extend from the earliest date to the latest date.

- If no dates are listed in the boxes, ensure that the correct folder has been selected in step 2.
- You can modify the dates, if necessary, simply by selecting the dates in the pull-down list.



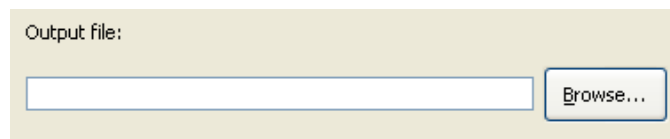
A dialog box titled "Date range:" with two pull-down menus. The first menu shows "January 1, 2000" and the second shows "December 31, 2001". The word "to" is centered between the two menus.

- **Please note:** if you load non-consecutive quarterly .nc files, then a warning message will appear:



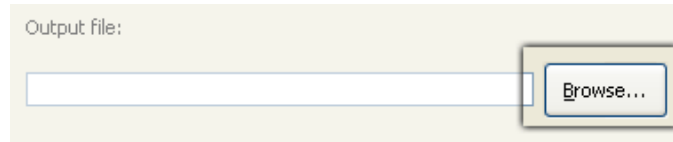
This alerts the user to the fact that non-consecutive dates will reset the days-since-dry calculation.

8. Type a path and file name for the output file. (As the output file is a text file, include the .txt extension when naming the file.)

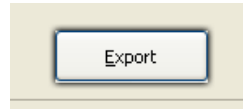


A dialog box titled "Output file:" with a text input field and a "Browse..." button.

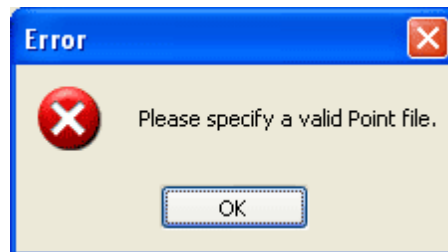
You may also click the browse button and use the dialog box to indicate where you want to save the file. Then type the output file name.



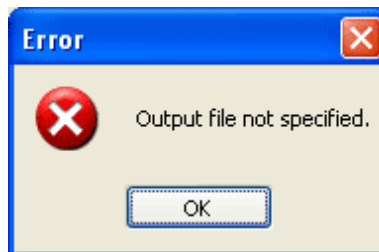
9. Click the export button.



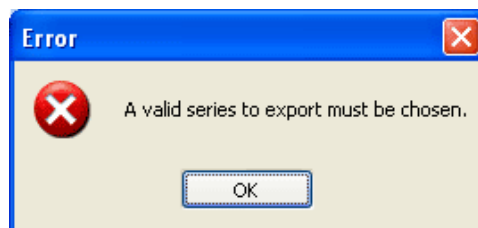
Various error messages will inform the user if an error on the input form or input data set occurs. Sample error messages are given below:



Points file selected is not valid.

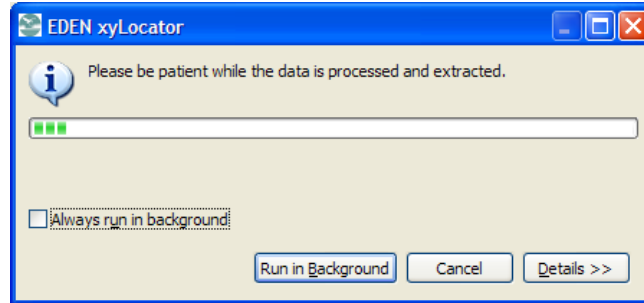


An output file was not entered in.

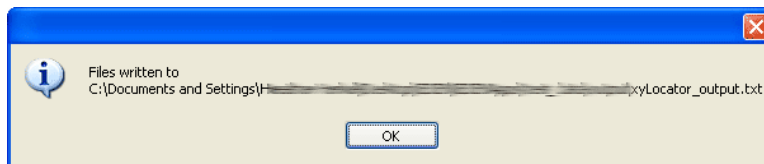


None of the series (ground elevation, water surface elevation, water depth, or days since dry) was selected. At least one must be selected.

A window will keep you apprised of the program's progress.



10. A message box will let you know when the program has successfully completed the export process.



11. To close the application, either click on "File" (in the upper-left corner of the application) or click on the "Close" button in the upper-right corner of the window.



12. The output file is a tab-delimited text file that can be opened in a text editor or a variety of spreadsheet programs (including Excel). A sample output file, opened in Excel, is shown below.

```

xyLocator_output.txt - Notepad
File Edit Format View Help

Water surface elevation (cm, NAVD88)
=====
2A300 S145_T WCA2U1 SITE_17 SITE_19 EDEN13 W
2000/01/01 369 247 360 356 361 2
2000/01/02 368 246 359 356 360 2
2000/01/03 368 246 359 355 360 2
2000/01/04 368 245 359 355 359 2
2000/01/05 367 244 358 354 359 2
2000/01/06 367 244 358 354 359 2
2000/01/07 366 243 358 354 358 2
2000/01/08 366 243 357 353 358 2
2000/01/09 366 242 357 353 358 2
2000/01/10 365 242 356 353 357 2
2000/01/11 365 269 356 352 357 2
2000/01/12 363 284 354 351 356 2
2000/01/13 362 284 354 350 355 2
2000/01/14 362 285 353 349 354 2
2000/01/15 361 286 351 348 352 2
2000/01/16 360 286 351 348 352 2
2000/01/17 359 286 350 347 351 2
2000/01/18 358 286 349 346 351 2
2000/01/19 357 287 348 345 350 2
2000/01/20 356 287 347 344 349 2
2000/01/21 355 288 347 343 349 2
2000/01/22 355 288 346 342 348 2
2000/01/23 354 288 344 342 347 2
2000/01/24 355 289 346 343 348 2
2000/01/25 355 289 346 343 348 2
2000/01/26 355 289 346 343 348 2

```

Note, if any of the coordinates listed in the points files are outside the EDEN domain, “no data” will appear in the output file:

Water surface elevation (m, NAVD88)			
=====			
	Site1	Site2	Site3
8/31/2009	no data	2.76	2.78
9/1/2009	no data	2.75	2.78
9/2/2009	no data	2.78	2.81
9/3/2009	no data	2.78	2.8
9/4/2009	no data	2.78	2.8
9/5/2009	no data	2.81	2.83

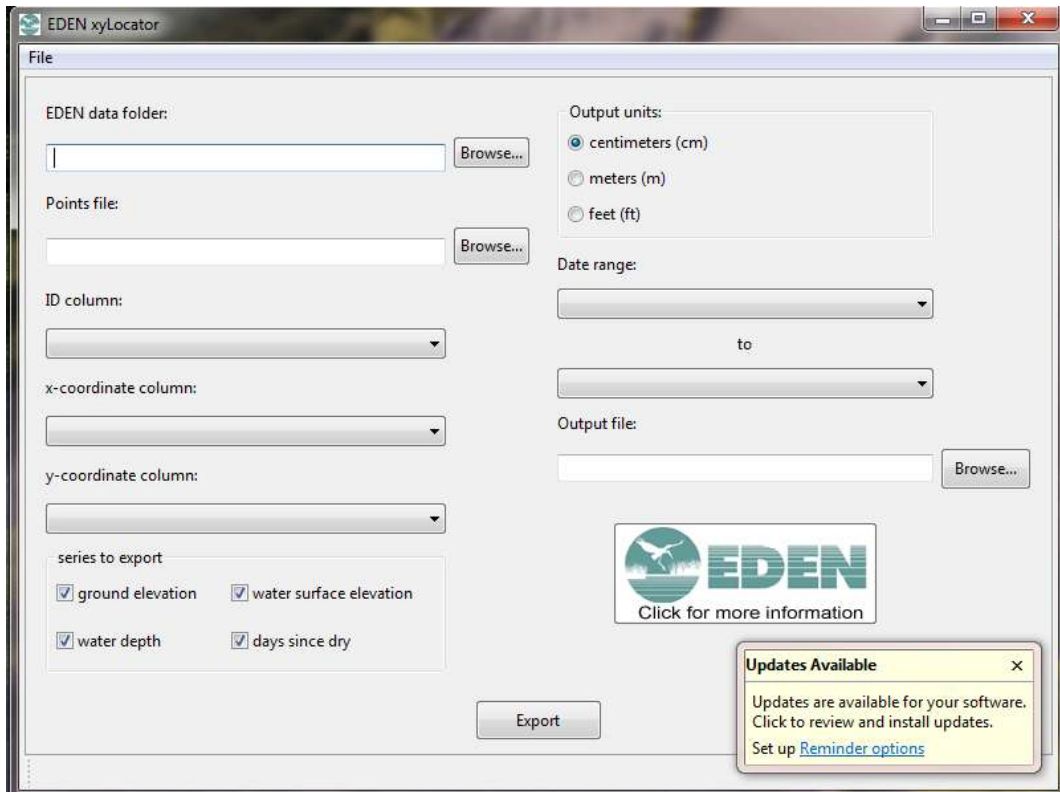
Additional Information (Updates and Log Files)

Updates: When the application is opened and there is connection to the internet, the program will check to see if there are any updates to the application available. If there are, the program will notify the user so they can download the update(s) if they wish. Please see the next section, “Software Updates”, for additional information.

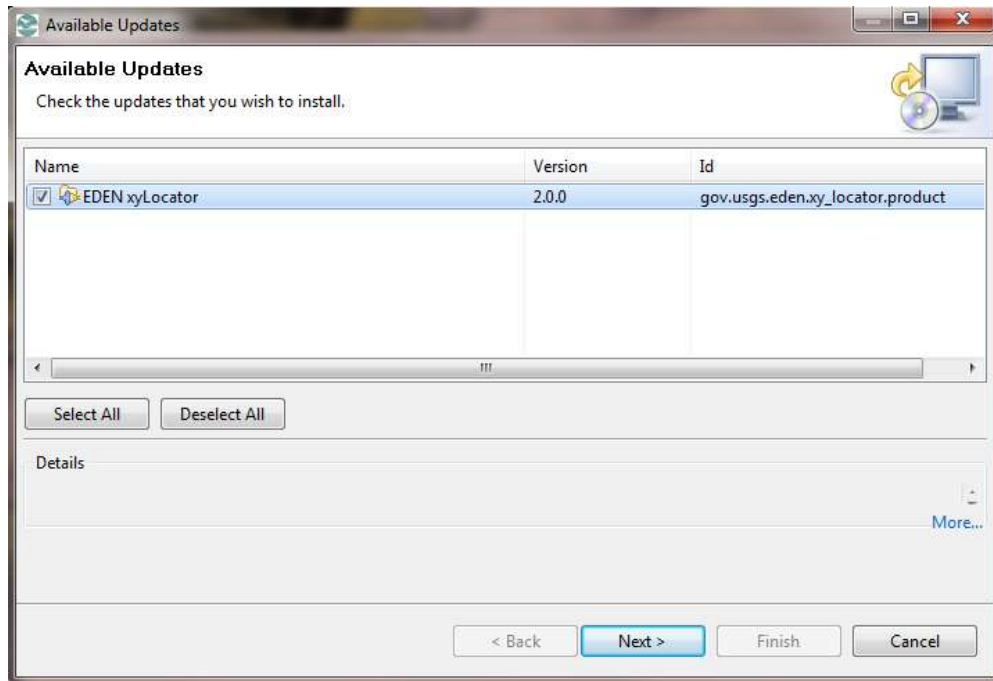
Log File: The xyLocator automatically creates a log file containing program information and any error messages. The log file, named “xy_Locator.log”, is located in the same folder as the xyLocator application (.exe) file. You may be asked to send this file to the EDEN team for the purpose of diagnosing errors.

Software Updates for EDEN xyLocator Tool

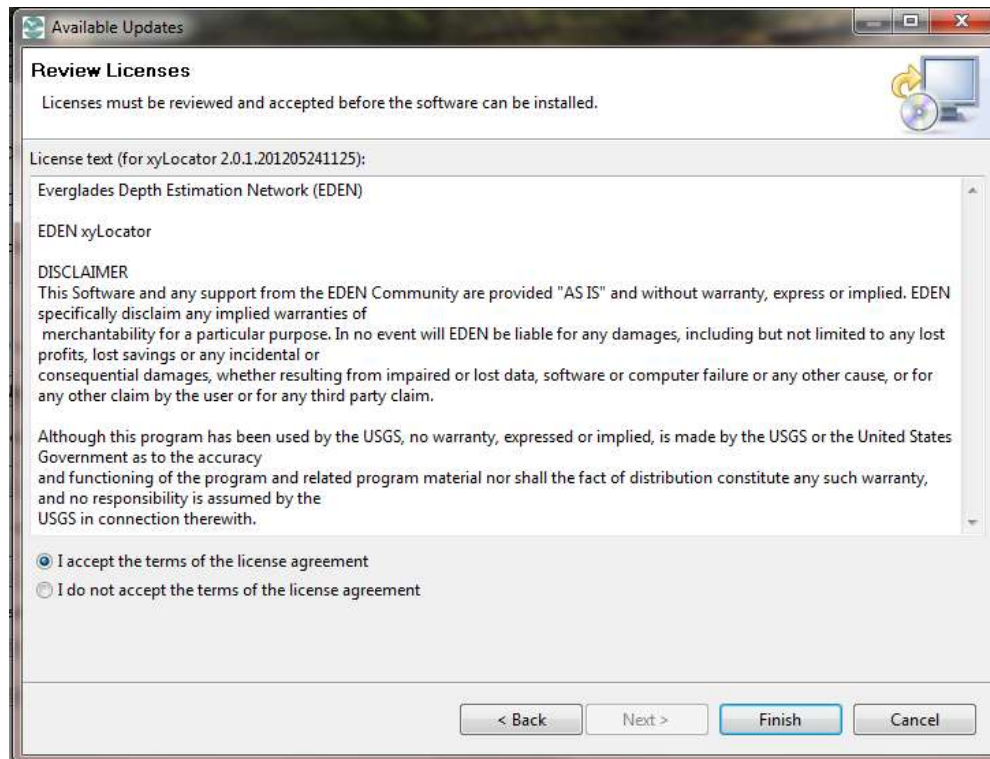
Each time the xyLocator program is started up, the program checks to see if any updates are available. If there is an update, an “Update Available” box appears:



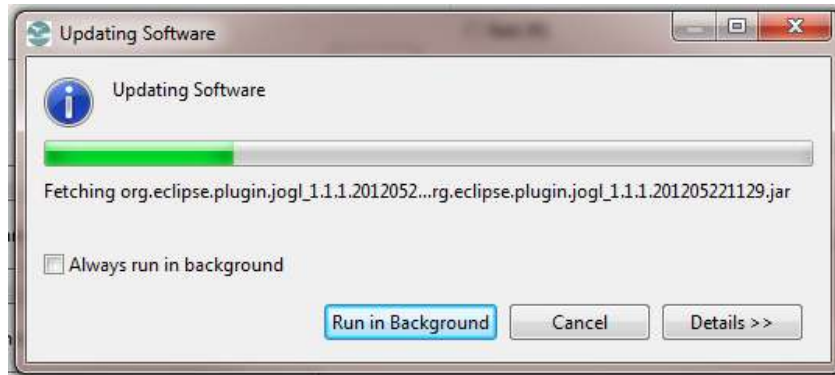
If you wish to update the tool, click on the “Updates Available” box and an “Available Updates” dialog opens:



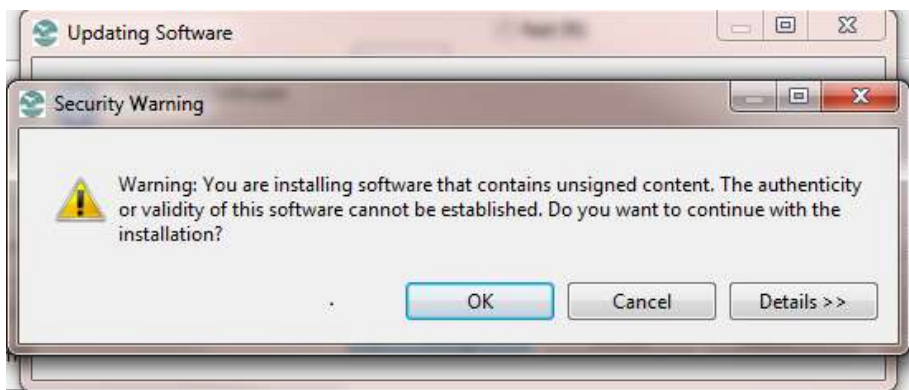
Check the updates that you like to install and hit the “Next” button:



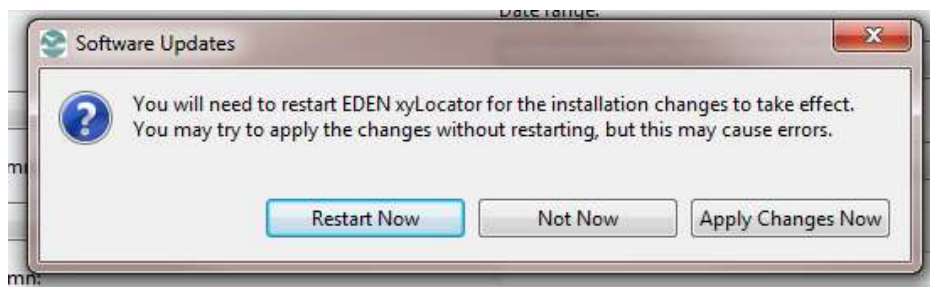
When you accept the license agreement, the “Finish” button is enabled. Click the “Finish” button to begin the software update. An “Updating Software” dialog appears:



Please ignore the “Security Warning” message (if displayed) and click “OK” for the software update to complete:



Finally, click the “Restart Now” button for the installation changes to take effect:



Developed for Everglades Depth Estimation Network (EDEN) through a partnership with the USGS National Wetlands Research Center’s Advanced Application team.



For more information, contact Pamela Telis, patelis@usgs.gov.

<http://sofia.usgs.gov/eden>