EDEN Depth&DaysSinceDry Tool (v. 2.0) User's Guide

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What is the EDEN Depth&DaysSinceDry Tool?

EDEN Depth&DaysSinceDry is a program for creating daily surfaces (in NetCDF file format, .nc) of water depth (in centimeters) and days since dry from EDEN daily water level surfaces and ground elevation model.

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

For your information:

At the beginning of the userspecified 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.

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).

All water depth data are output in centimeters, to North American Vertical Datum of 1988 (NAVD88).

Depth and 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. Please note, the ground elevation for an EDEN grid cell may not accurately represent the grid elevations at a specific sample location.

The days since last dry indicate the number of consecutive days that an EDEN grid cell surface has had a depth value greater then 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.



/// = dry at grid cell

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.

Installation Instructions

Prior versions of the Depth&DaysSinceDry required the user to download NetCDF .dll files and the .NET Framework. This is no longer required, as the latest version of the Depth&DaysSinceDry 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 Depth&DaysSinceDry. This is true for both 32- and 64-bit machines.

- EDEN Depth&DaysSinceDry.exe (currently at v. 2.0) Available for download at <u>http://sofia.usgs.gov/eden/edenapps/depth-dayssincedry.php.</u> Executable file can be copied to any location on your computer.
- 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 Depth&DaysSinceDry. The 64-bit JVM causes issues with the Depth&DaysSinceDry, 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

Required files:

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

User Instructions

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



The application will open to the following window.

EDEN Depth@DaysSinceDry	
le	
EDEN data folder:	
	Browse
DEN export folder:	
	Browse
Water depth (continuetors)	
Days since last dry	
Click for more inform	ation
)uarters to export:	

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).

😂 EDEN Depth&DaysSinceDry	
File	
EDEN data folder:	
	Browse
EDEN export folder:	
	Browse
Series to export	

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

EDEN Depth&DaysSinceDry	
File	
EDEN data folder:	Browce
EDEN export folder:	gowsen
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Series to export	

Next, type the folder output path where you want the files to be saved.

😸 EDEN Depth&DaysSinceDry	
File	
EDEN data folder: EDEN export folder:	Browse
Series to export	Browse

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



- 3. Select the data you want to export.
 - **Water depth** extracts a time series of water depth in centimeters for each cell for the user specified one-quarter-year periods.
 - **Days since last dry** indicates the number of consecutive days that an EDEN grid cell surface has had a water 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

You may select either or both series for export.



4. Select the one-quarter-year periods for export. The available **quarters to export** will auto-populate from the dates contained in the water-level files inside the EDEN data folder. If there are multiple water surface files, then the dates will extend from the earliest date to the latest date.

If no quarters are listed in the box, ensure that the correct folder has been selected in step 2.

You may select any quarters or **all available quarters** for export. You can click/uncheck the **all available quarters** check box to toggle between:

- selection of **all** quarters (box checked) or
- selection of **no** quarters (box unchecked). This allows the user to individually select specific quarters from the list.

Days since last dry	Click for more information
Quarters to export:	
All available quarters. 2000, q1 (January - March) 2000, q2 (April - June) 2000, q3 (July - September) 2000, q3 (July - September) 2000, q4 (October - December) 2001, q1 (January - March) 2001, q2 (April - June) 2001, q4 (October - December)	
	Export

5. Click the export button.



If any information on the form is incomplete, a box will notify you to make the necessary correction.



The folder/directory input folder is missing water-level .nc files.



The folder/directory containing the water-level .nc files must also contain the ground elevation (DEM) .nc file. Otherwise, depth and/or days since last dry cannot be calculated.



No output folder was selected.



In order for the program to correctly calculate days since last dry, the .nc files must be consecutive. If the files are non-consecutive, the days since last dry calculation will reset and may not accurately represent the data.

Jutput	file(s) exis	IS	
?	One or mo Do you wa	re files exists Int to overwrite	file(s)
			2

The output folder already contains depth and/or days since last dry .nc files. By clicking "Yes" you will overwrite the existing files.

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

EDEN Depth@DaysSince	eDry	
Preparing 2000_q4_de	pthinc	
1		
Writing time and coordinate val	ues.	
Always run in background		
	Run in Background	Cancel Details >>

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

(į)	Files written to C:\Documents and Settings\}	the last statement of the last statement of the
		ОК

7. 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.





The .nc files can then be viewed in ArcGIS 9.2 or later (or any program that can view NetCDF files). In addition, you can use another EDEN tool, NetCDFtoGrid, to convert the .nc files into ESRI grid files and view them in other applications.

Additional Information (Updates and Log Files)

Updates: Upon opening the application, the program will check to see if there are any updates 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 Depth&DaysSinceDry tool automatically creates a log file containing program information and any error messages. The log file, named "eden_depth_and_days_since_dry.log", is located in the same folder as the Depth&DaysSinceDry application (.exe) file.

Software Updates for EDEN Depth&DaysSinceDry Tool

Each time the Depth&DaysSinceDry program is started up, the program checks to see if any updates are available. If there is an update, an "Update Available" box appears:

le			
EDEN data folder:	Brown	Output units: © centimeters (cm)	
l Points file:	browse	🐑 meters (m) ⊘ feet (ft)	
	Browse	Date range:	
ID column:	•	to	•
x-coordinate column:		Output file	•
y-coordinate column:			Browse
series to export	•	EDEN	
Image: ground elevation Image: ground elevation Image: ground elevation Image: ground elevation <td>n</td> <td>Click for more information</td> <td></td>	n	Click for more information	
	Exp	Updates Available Updates are availa Click to review an	ble for your software. d install updates.

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

product
product
Mor

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

😂 Available Updates	
Review Licenses Licenses must be reviewed and accepted before the software can be install	led.
License text (for xyLocator 2.0.1.201205241125):	
Everglades Depth Estimation Network (EDEN)	<u>مر</u>
EDEN xyLocator	
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I accept the terms of the license agreement	
\bigodot I do not accept the terms of the license agreement	
< Back	Next > Finish Cancel

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