

EDEN Depth&DaysSinceDry Tool (v. 1.1)

User's Guide

2/8/08 revised 07/24/08

What is EDEN Depth&DaysSinceDry Tool?

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

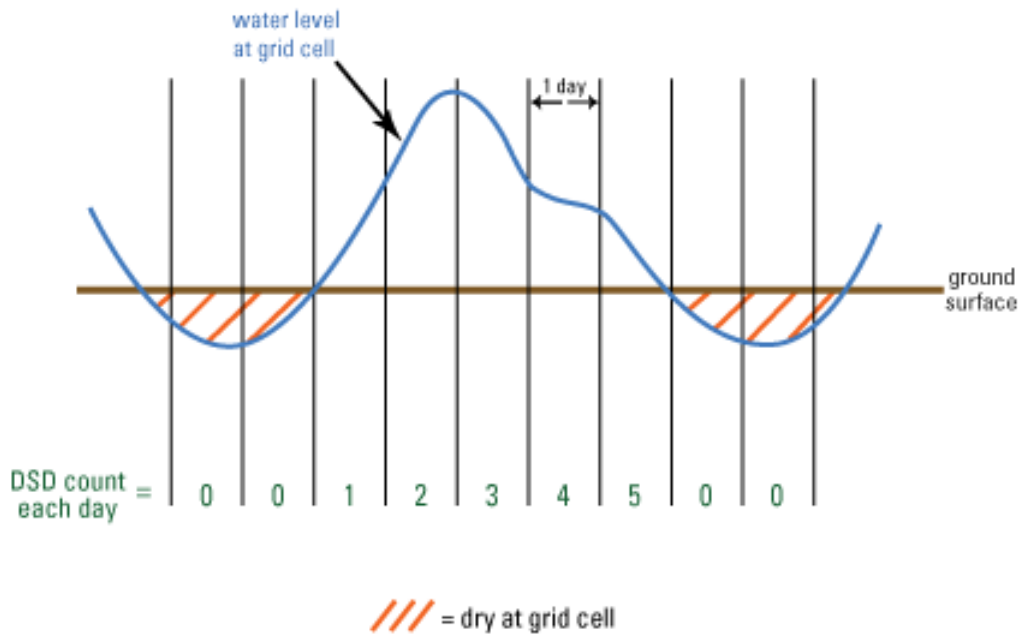
The daily surface of water depth is created by subtracting the ground elevation for the EDEN grid cell (400 meter by 400 meter cells) from the water level surface. The days since last dry indicate the number of consecutive days that an EDEN grid cell surface has had a depth value greater than zero. The 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 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.

All water level data are output in units to North American Vertical Datum of 1988 (NAVD88).

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.



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

Required for execution of the program:

1. **EDEN Depth&DaysSinceDry.exe** (currently at v. 1.0)
Available for download at <http://sofia.usgs.gov/eden/edenapps/depth-dayssincdry.php>.
Executable file can be copied to any location on your computer.
2. **netCDF dll (NetCDF data library files)**
Extract files from <http://sofia.usgs.gov/eden/edenapps/programs/netcdf-3.6.1win32.zip>.
Extract all files in the .zip and copy them to c:\windows\system32.
3. **.NET Framework 2.0**
EDEN Depth&DaysSinceDry requires the .NET Framework 2.0. If you receive an error message telling you that it is missing, you will need to download it from <http://www.microsoft.com> and install it. Accept the default settings.

User Input

Required files:

1. EDEN digital elevation model (DEM) file for ground elevation

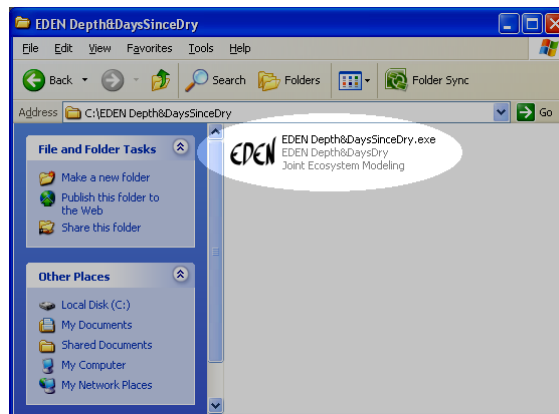
- a. NetCDF file format (.nc)
- b. Units of centimeters
- c. Available for download at
http://sofia.usgs.gov/eden/data/dem/eden_dem_cm_nov07.zip.

2. EDEN daily water level surfaces

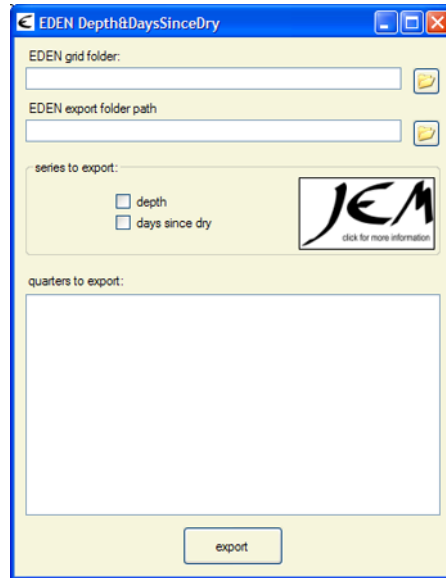
- a. NetCDF format file(s) (.nc) containing daily water level surfaces
- b. Multiple one-quarter-year files can be used for requested time series (be sure that continuous data files are present for accurate time series calculations)
- c. Available for download at
<http://sofia.usgs.gov/eden/models/watersurfacemod.php>.

User Instructions

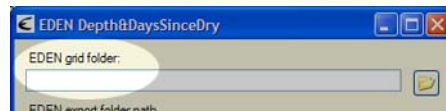
1. Open the application. To do this, navigate to the application and double-click on the icon.



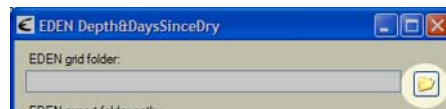
The application will open to the following window.



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).



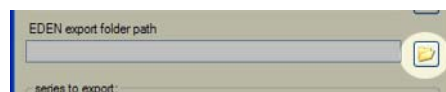
Alternatively, you may click the browse button and browse to the appropriate folder.



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

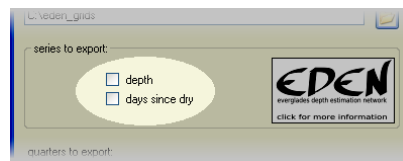


Alternatively, you may click the browse button and browse to the appropriate folder.



3. Select the data you want to export.
 - **Depth** extracts a time series of water depth for each cell for the user specified one-quarter-year periods.
 - **Days since dry** 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

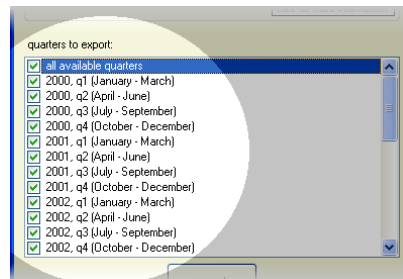
You may select either or both series for export.



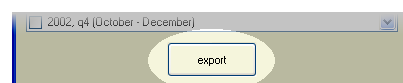
4. Select the one-quarter-year periods for export. The information in the **quarters to export** will auto-populate from the dates contained in the water surface files. If there are multiple water surface files, then the dates will extend from the earliest date to the latest date.

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.



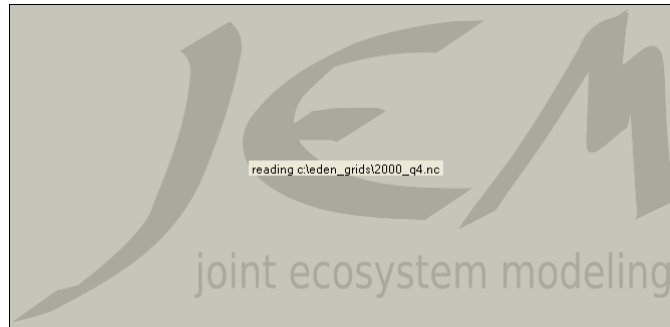
5. Click the export button.



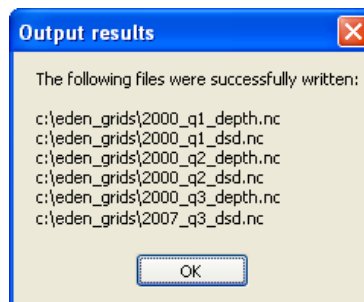
If any information on the form is incomplete, a box will notify you to make the necessary correction.



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



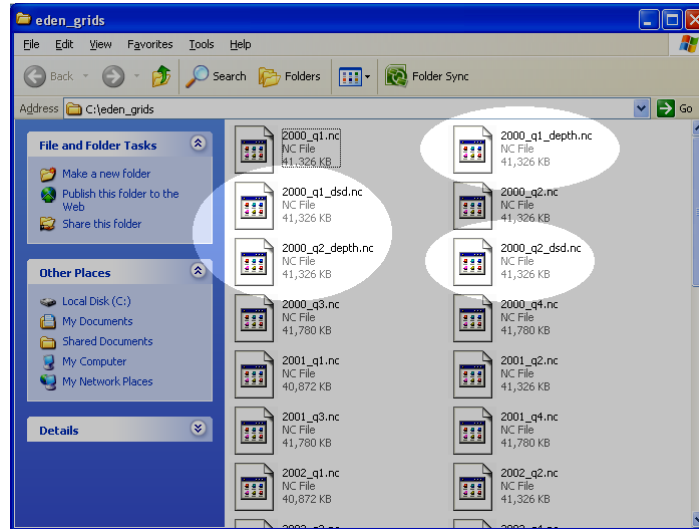
6. A message box will let you know when the program has successfully completed the export process.



7. To close the application, click on the close button in the upper-right corner of the window.



8. The output files are saved to the EDEN output folder selected in step 2. The name of each output file is the name of the one-quarter-year water surface file it was created from followed by “_depth” for depth files or “_dsd” for days since dry files. (Output file format is netCDF (.nc) file.)



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.

Developed for Everglades Depth Estimation Network (EDEN).
Joint Ecosystem Modeling, A DOI (USGS/USFWS/NPS)/
Universities/others Partnership based at IFAS,
University of Florida, Fort Lauderdale Research Center.



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

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