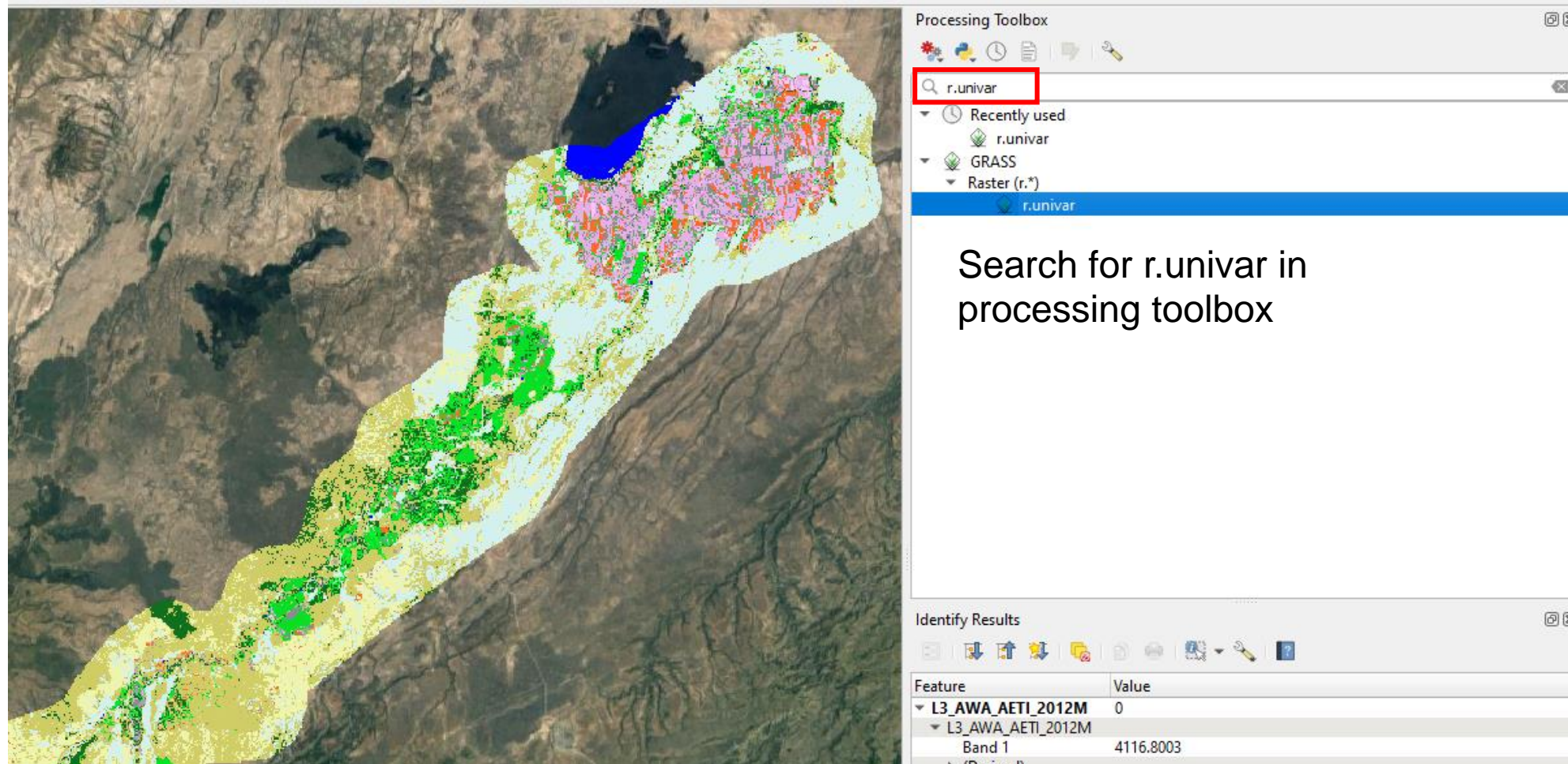


Time series analysis

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15 July 2022

Calculate univariate statistics of raster



For documentation: <https://grass.osgeo.org/grass78/manuals/r.univar.html>

Run as batch process

The screenshot shows the 'r.univar' tool window in QGIS. The window has a title bar with a green 'Q' icon and the text 'r.univar'. Below the title bar are two tabs: 'Parameters' and 'Log'. The 'Parameters' tab is active, showing various input fields and a section for advanced parameters. The 'Log' tab is also visible. On the right side of the window, there is a help panel titled 'r.univar' with a description of the tool's function. At the bottom of the window, there is a progress bar showing 0% completion. The 'Run as Batch Process...' button is highlighted with a red rectangle.

Parameters Log

Name of raster map(s)
0 inputs selected

Raster map used for zoning, must be of type CELL [optional]
...

Percentile to calculate (comma separated list if multiple) (requires extended statistics flag) [optional]
...

Field separator. Special characters: pipe, comma, space, tab, newline [optional]
pipe

▼ Advanced Parameters

☐ Calculate extended statistics

GRASS GIS 7 region extent [optional]
Not set

GRASS GIS 7 region cellsize (leave 0 for default)
0.000000

Univariate results
[Save to temporary file]

0%

Run as Batch Process...

Run Close Help

r.univar
Calculates univariate statistics from the non-null cells of a raster map.

Run as batch process

Batch Processing - r.univar

Parameters Log

1 2 3 4 5 6 7 8 9 10 11 12 13

Name of raster map(s)	map used for zoning, must be of type	separated list if multiple (raster characters: pipe, comma)	Univariate results
Autofill...	Autofill...	Autofill...	Autofill...
1 inputs selected	L3_AWA_LCC_2014 []	comma	C:/Users/Safi/Desktop/Testfolder/M_1.txt
1 inputs selected	L3_AWA_LCC_2014 []	comma	C:/Users/Safi/Desktop/Testfolder/M_2.txt
1 inputs selected	L3_AWA_LCC_2014 []	comma	C:/Users/Safi/Desktop/Testfolder/M_3.txt
1 inputs selected	L3_AWA_LCC_2014 []	comma	C:/Users/Safi/Desktop/Testfolder/M_4.txt
1 inputs selected	L3_AWA_LCC_2014 []	comma	C:/Users/Safi/Desktop/Testfolder/M_5.txt
1 inputs selected	L3_AWA_LCC_2014 []	comma	C:/Users/Safi/Desktop/Testfolder/M_6.txt
1 inputs selected	L3_AWA_LCC_2014 []	comma	C:/Users/Safi/Desktop/Testfolder/M_7.txt
1 inputs selected	L3_AWA_LCC_2014 []	comma	C:/Users/Safi/Desktop/Testfolder/M_8.txt
1 inputs selected	L3_AWA_LCC_2014 []	comma	C:/Users/Safi/Desktop/Testfolder/M_9.txt
1 inputs selected	L3_AWA_LCC_2014 []	comma	C:/Users/Safi/Desktop/Testfolder/M_10.txt
1 inputs selected	L3_AWA_LCC_2014 []	comma	C:/Users/Safi/Desktop/Testfolder/M_11.txt
1 inputs selected	L3_AWA_LCC_2014 []	comma	C:/Users/Safi/Desktop/Testfolder/M_12.txt

☐ Load layers on completion

0%

Run as Single Process...

Run Close Help

Convert text data to columns

The screenshot displays a Windows File Explorer window with a folder named 'Testfolder'. Inside this folder, there are 12 files labeled M1 through M12. A blue arrow points from the 'M1' file to a Notepad window. The Notepad window shows a list of data for 'M1' with columns: zone, label, non_null_cells, null_cells, min, max, range, mean, mean_of_abs, stddev, variance, coeff_var, sum, and sum_abs. A second blue arrow points from the 'M1' file to an Excel spreadsheet. The Excel spreadsheet shows a table with columns: zone, label, non_null, null_cells, min, max, range, mean, mean_of, stddev, variance, coeff_var, sum, and sum_abs. The data in the Excel spreadsheet matches the data in the Notepad window.

	zone	label	non_null	null_cells	min	max	range	mean	mean_of	stddev	variance	coeff_var	sum	sum_abs
1	1	78261	0	409.2	5694.7	5694.7	5285.5	3002.884	3002.884	905.605	820120.5	30.15784	2.35E+08	2.35E+08
2	4	304249	0	5214.2	5214.2	1164.786	1164.786	565.5051	565.5051	319796.1	48.55014	3.54E+08	3.54E+08	
3	9	12	0	2647.4	4352.4	1705	3616.925	3616.925	461.0308	212549.4	12.74648	43403.1	43403.1	
4	11	452	0	564.2	5115	4550.8	2841.246	2841.246	1146.337	1314088	40.34627	1284243	1284243	
5	12	48026	0	5629.6	5629.6	3865.267	3865.267	1369.801	1876355	35.43872	1.86E+08	1.86E+08		
6	13	36872	0	564.2	5629.6	5065.4	3022.555	3022.555	819.8315	672123.7	27.12379	1.11E+08	1.11E+08	
7	18	452719	0	158.1	5567.6	5409.5	2112.328	2112.328	806.8873	651067.2	38.19897	9.56E+08	9.56E+08	
8	19	15010	0	5567.6	5567.6	2493.027	2493.027	769.5332	592181.4	30.86742	37420340	37420340		
9	21	45044	0	5598.6	5598.6	2584.844	2584.844	1315.098	1729482	50.87725	1.16E+08	1.16E+08		
10	22	33325	0	192.2	5598.6	5406.4	3273.22	3273.22	1224.08	1498372	37.39681	1.09E+08	1.09E+08	
11	30	424471	0	5567.6	5567.6	1146.462	1146.462	601.9153	362302	52.50199	4.87E+08	4.87E+08		
12	109	1	0	3313.9	3313.9	0	3313.9	3313.9	0	0	3313.9	3313.9		
13	111	56	0	1460.1	5087.1	3627	3024.216	3024.216	823.5004	678153	27.23021	169356.1	169356.1	
14	113	64642	0	691.3	5629.6	4938.3	3806.766	3806.766	780.2777	608833.3	20.49713	2.46E+08	2.46E+08	
15	121	39461	0	443.3	5598.6	5155.3	3810.951	3810.951	1058.431	1120277	27.77342	1.5E+08	1.5E+08	
16	122	105494	0	409.2	5629.6	5220.4	3671.394	3671.394	1262.855	1594803	34.39716	3.87E+08	3.87E+08	

Convert text data to columns

File Home Share View

Clipboard: Copy, Paste, Copy path, Paste shortcut, Cut, Copy to, Delete, Rename, New folder, New item, Easy access

Testfolder

Quick access: Desktop, Downloads, Documents, Pictures, WaPOR, ProjectAwash, WaterSense, MA_GeoRep, eLEAF_IPA, WaPORact, PythonScripts, frame-v2, LCC_Keys, Shenefilec

File Explorer: Name, Date modified, Type

File Explorer contents:

Name	Date modified	Type
M1	14/07/2022 23:15	Text Docume...
M2	14/07/2022 23:15	Text Docume...
M3	14/07/2022 23:15	Text Docume...
M4	14/07/2022 23:15	Text Docume...
M5	14/07/2022 23:15	Text Docume...
M6	14/07/2022 23:15	Text Docume...
M7	14/07/2022 23:16	Text Docume...
M8	14/07/2022 23:16	Text Docume...
M9	14/07/2022 23:16	Text Docume...
M10	14/07/2022 23:16	Text Docume...
M11	14/07/2022 23:16	Text Docume...
M12	14/07/2022 23:16	Text Docume...

Book1 - Excel

File Home Insert Page Layout Formulas Data Review View Help Nitro Pro

Data: Get Data, Recent Sources, Existing Connections, Queries & Connections, Properties, Edit Links, Refresh All

Get & Transform Data

Queries & Connections

Data Types

Sort & Filter

Data Types: Stocks (En...), Geography...

Sort: A-Z, Z-A, Sort

Filter: Filter, Clear, Reapply, Advanced

Text to Columns

H23

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	zone	label	non_null	null_cells	min	max	range	mean	mean_of_stddev	variance	coeff_var	sum	sum_abs		
2	1		78261	0	409.2	5694.7	5285.5	3002.884	3002.884	905.605	820120.5	30.15784	2.35E+08	2.35E+08	
3	4		304249	0	0	5214.2	5214.2	1164.786	1164.786	565.5051	319796.1	48.55014	3.54E+08	3.54E+08	
4	9		12	0	2647.4	4352.4	1705	3616.925	3616.925	461.0308	212549.4	12.74648	43403.1	43403.1	
5	11		452	0	564.2	5115	4550.8	2841.246	2841.246	1146.337	1314088	40.34627	1284243	1284243	
6	12		48026	0	0	5629.6	5629.6	3865.267	3865.267	1369.801	1876355	35.43872	1.86E+08	1.86E+08	
7	13		36872	0	564.2	5629.6	5065.4	3022.555	3022.555	819.8315	672123.7	27.12379	1.11E+08	1.11E+08	
8	18		452719	0	158.1	5567.6	5409.5	2112.328	2112.328	806.8873	651067.2	38.19897	9.56E+08	9.56E+08	
9	19		15010	0	0	5567.6	5567.6	2493.027	2493.027	769.5332	592181.4	30.86742	37420340	37420340	
10	21		45044	0	0	5598.6	5598.6	2584.844	2584.844	1315.098	1729482	50.87725	1.16E+08	1.16E+08	
11	22		33325	0	192.2	5598.6	5406.4	3273.22	3273.22	1224.08	1498372	37.39681	1.09E+08	1.09E+08	
12	30		424471	0	0	5567.6	5567.6	1146.462	1146.462	601.9153	362302	52.50199	4.87E+08	4.87E+08	
13	109		1	0	3313.9	3313.9	0	3313.9	3313.9	0	0	0	3313.9	3313.9	
14	111		56	0	1460.1	5087.1	3627	3024.216	3024.216	823.5004	678153	27.23021	169356.1	169356.1	
15	113		64642	0	691.3	5629.6	4938.3	3806.766	3806.766	780.2777	608833.3	20.49713	2.46E+08	2.46E+08	
16	121		39461	0	443.3	5598.6	5155.3	3810.951	3810.951	1058.431	1120277	27.77342	1.5E+08	1.5E+08	
17	122		105494	0	409.2	5629.6	5220.4	3671.394	3671.394	1262.855	1594803	34.39716	3.87E+08	3.87E+08	

Plot ETa time series per landcover class

- What trends do you see and what could be the reason?
- What message is/can be conveyed by other statistical parameters (standard deviation, coefficient of variation)?
- Compare time series of ETa and NDVI over crop type/land cover map
- Reflection on the spatial and temporal distribution of ETa and Biomass.

