Prostorska in krajinska arheologija-Vaje
4

Domača naloga

https://ge.tt/7IRIIRQ/v/0?c

Archaeological resource modelling in temperate river valleys: a case study from the Trent Valley, UK

A.J. Howard[1], A.G. Brown[2], C.J. Carey[3], K. Challis[3], L.P. Cooper[4], M. Kincey[3] & P. Toms[5]

Methods for mapping and determining the condition of archaeological resources while they are still underground have been in development for nearly half a century. The authors here offer an example from the frontiers of the art: the application of a package of remote sensing procedures not only designed to locate sites but to model the valley deposits which contain and cover them. The variation in success of different methods in different deposits offers a guide to the design of evaluation projects on sand and gravel terrain everywhere.

Keywords: Britain, Trent, prehistory, alluvial, floodplain, confluence, lidar, ERGI, geophysics, prospection, bore holes, radiocarbon

Introduction

Archaeological remains within river valleys are often exceptionally well preserved through a combination of the presence of high water tables, stable terrace surfaces and substantial depths of alluvium (Brown 1997; Howard *et al*. 2003). However, recent archaeological research focused on British river valleys has shown that both cultural and taphonomic factors influence the wealth and spatial distribution of the archaeological resource across floodplains and terrace surfaces. A number of authors have demonstrated a direct link between the distribution and preservation potential of archaeology and the observed geomorphology (Howard & Macklin 1999; Passmore *et al*. 2006). Such patterns of preservation are not unique to the UK and have been observed in Europe (Howard *et al*. 2004), Africa (Pearl & Dickson 2004) and North America (Bettis & Mandel 2002; Bauer *et al*. 2004). Published studies are not just restricted to empirical observations; recent analytical work within meandering river systems has sought to predict the spatial distribution of archaeology

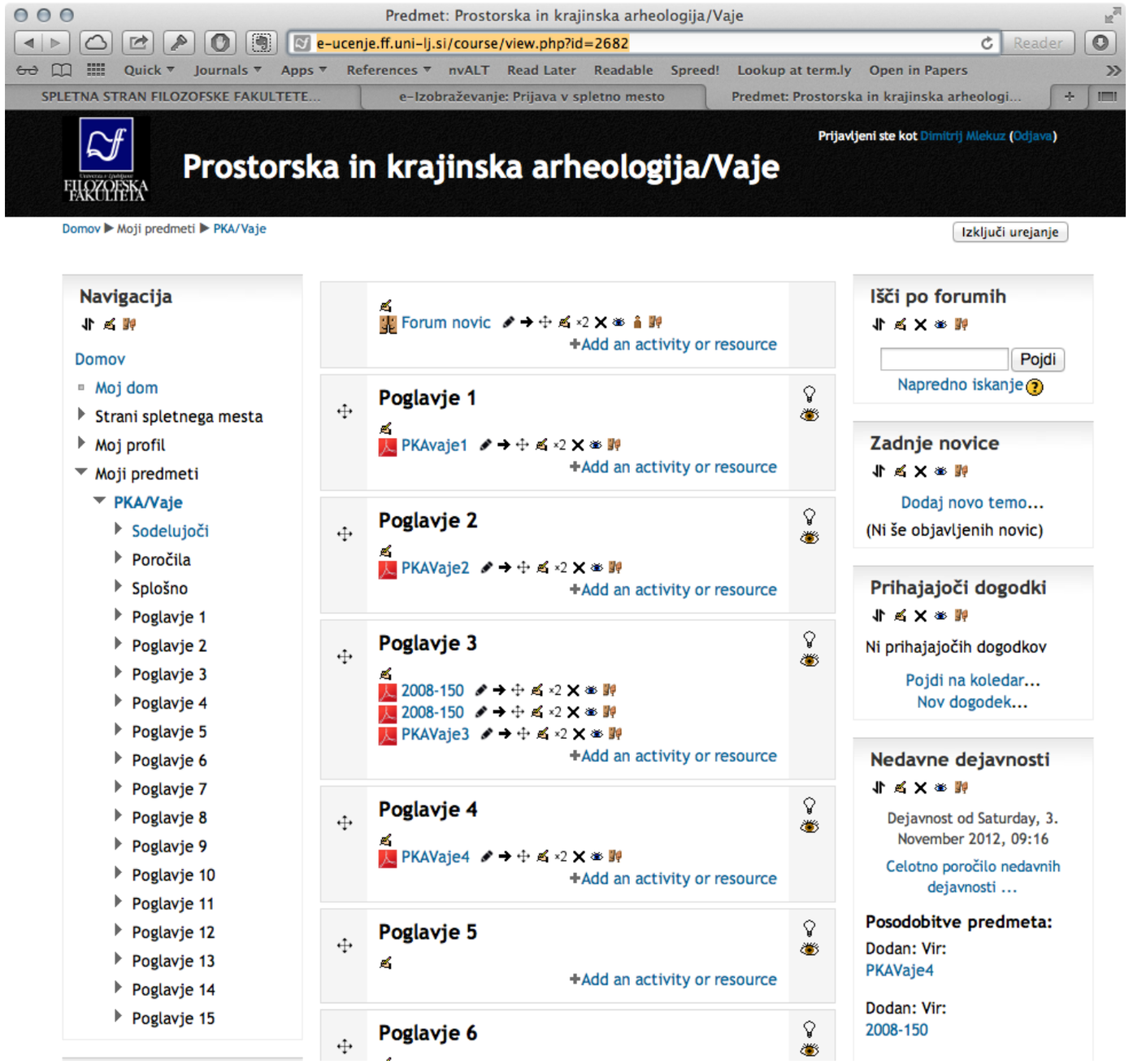
[1] *Institute of Archaeology & Antiquity, University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK (Email: A.J.Howard@bham.ac.uk)*
[2] *School of Geography, University of Southampton, Highfield, Southampton, SO17 1BJ, UK (Email: A.G.Brown@soton.ac.uk)*
[3] *Birmingham Archaeology and VISTA Centre, University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK (Email: C.Carey@bham.ac.uk; K.Challis@bham.ac.uk; m.e.kincey@bham.ac.uk)*
[4] *University of Leicester Archaeological Services (ULAS), University of Leicester, University Road, Leicester, LE1 7RH, UK (Email: lpc2@le.ac.uk)*
[5] *Department of Natural and Social Sciences, University of Gloucestershire, Swindon Road, Cheltenham, GL50 4AZ, UK (Email: ptoms@glos.ac.uk)*

Received: 19 February 2007; Revised: 13 April 2008; Accepted: 23 June 2008

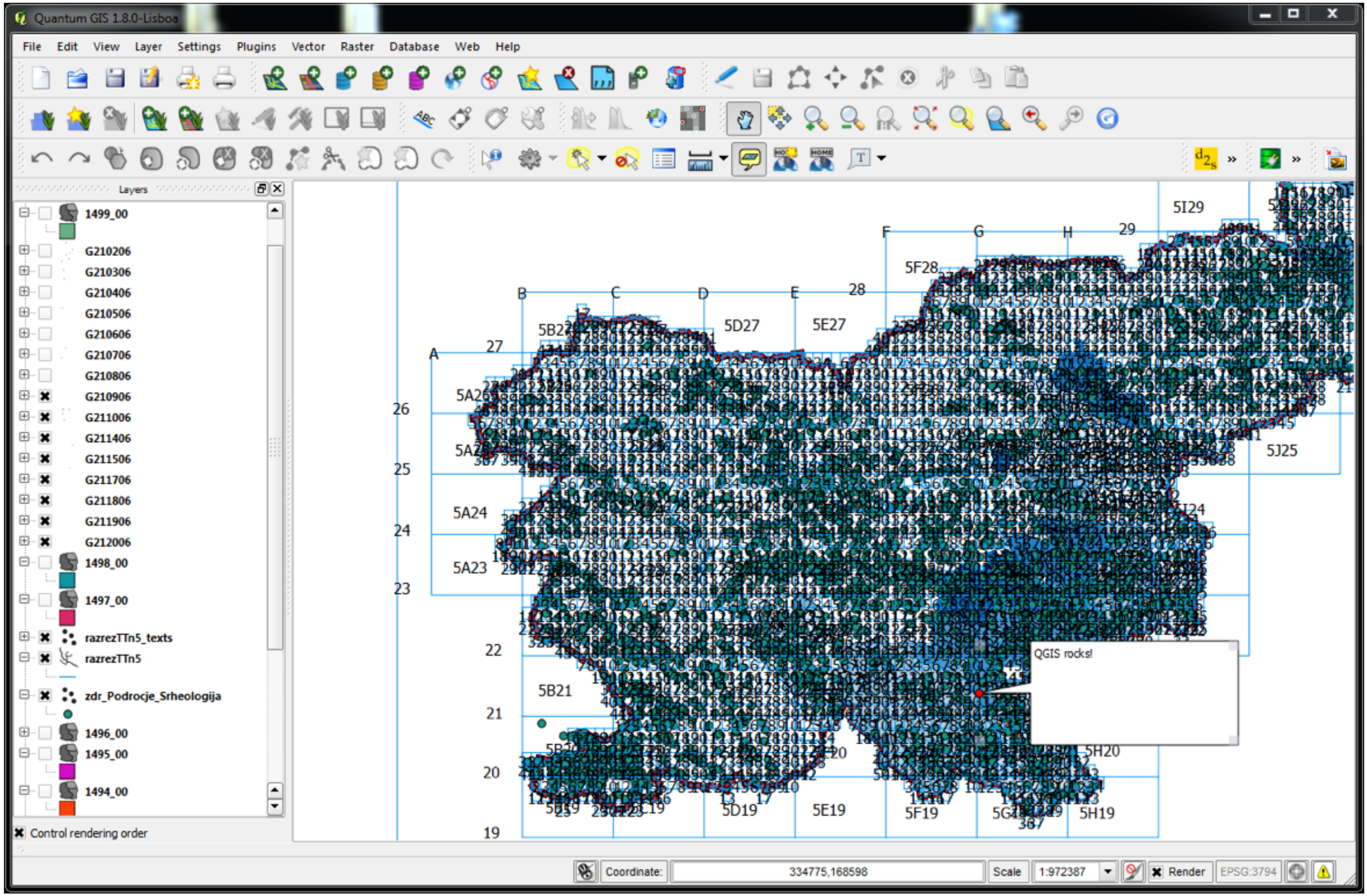
ANTIQUITY 82 (2008): 1040–1054

http://e-ucenje.ff.uni-lj.si

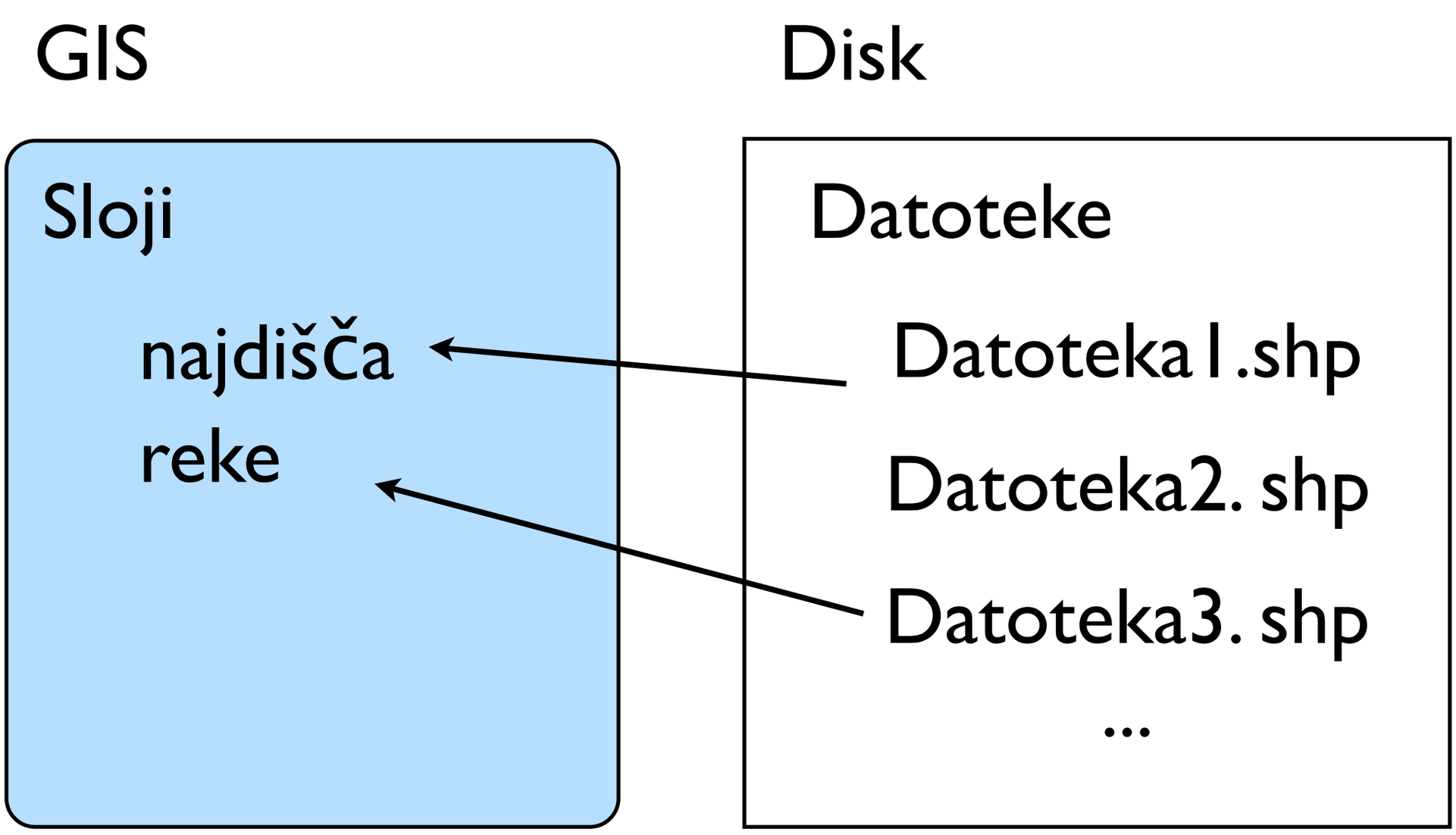
Ključ:VajePKA



Quantum GIS


Quantum GIS 1.8.0-Lisboa
File Edit View Layer Settings Plugins Vector Raster Database Web Help
Layers
1499_00
G210206
G210306
G210406
G210506
G210606
G210706
G210806
G210906
G211006
G211406
G211506
G211706
G211806
G211906
G212006
1498_00
1497_00
razrezTTn5_texts
razrezTTn5
zdr_Podrocje_Srheologija
1496_00
1495_00
1494_00
Control rendering order
QGIS rocks!
Coordinate:
334775,168598
Scale
1:972387
Render
EPSG:3794

Projekt



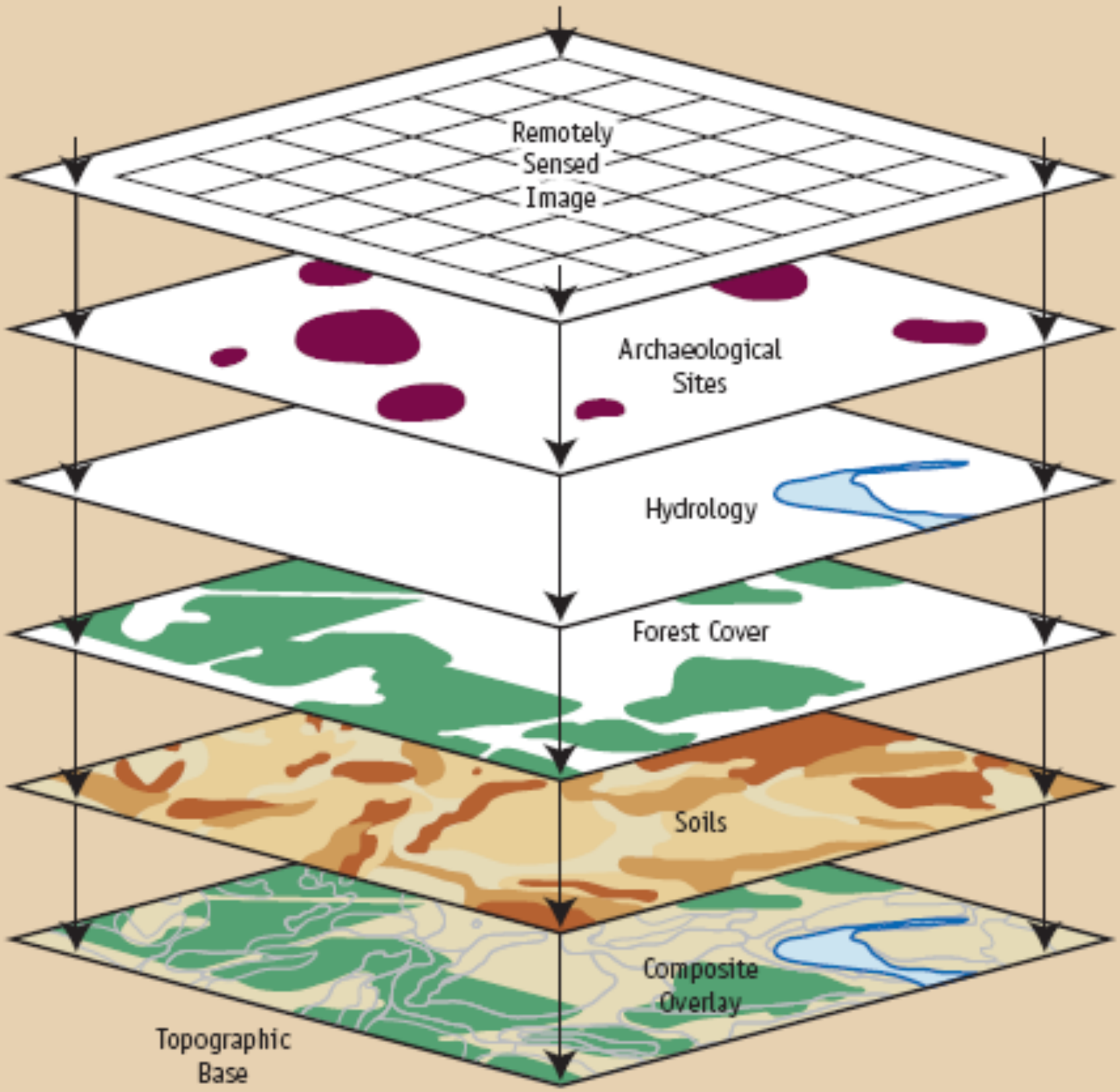
Projekt: Vaja 1

C:\GIS\vaje

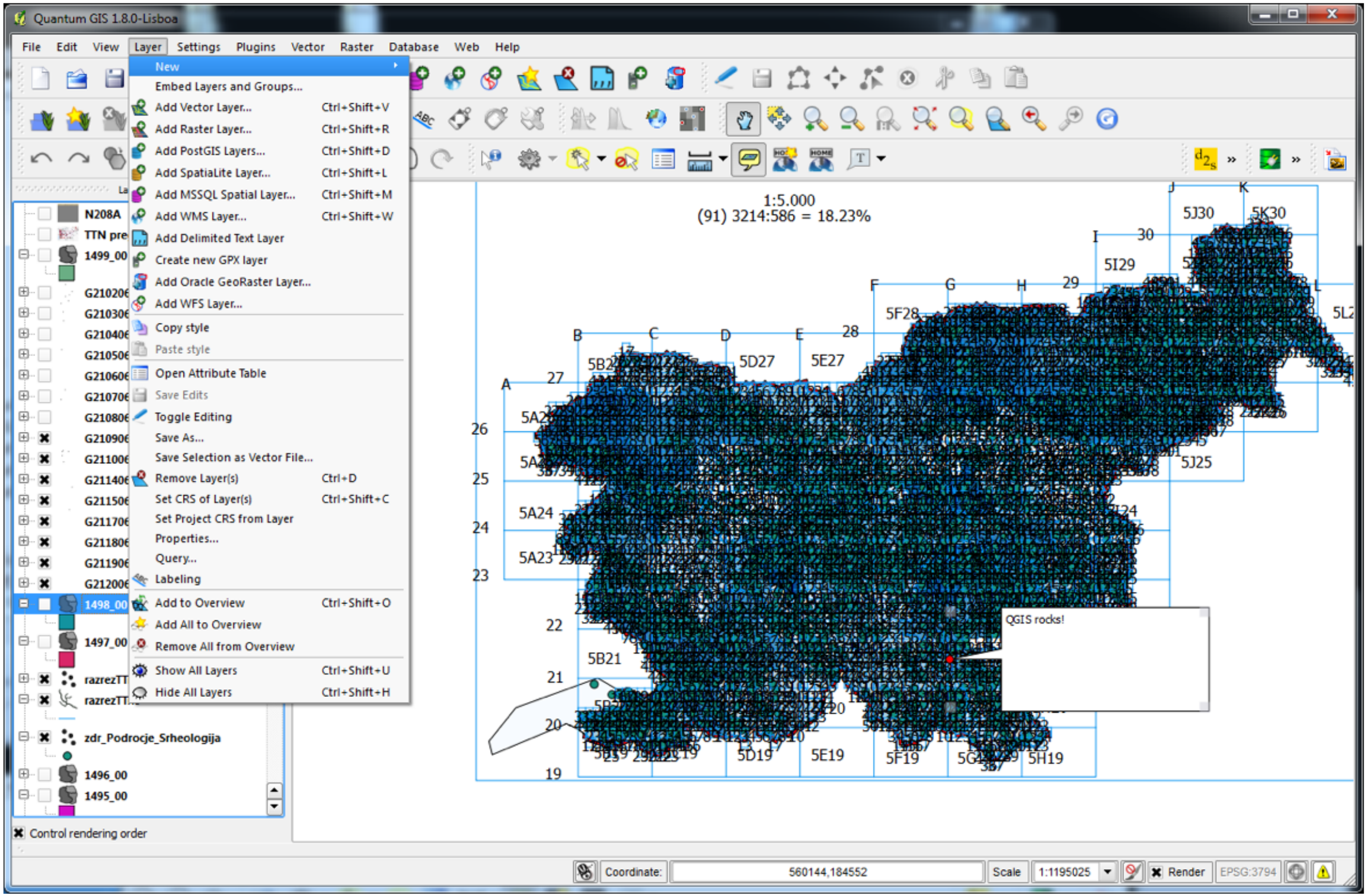
Projekcija!

Thematic layers

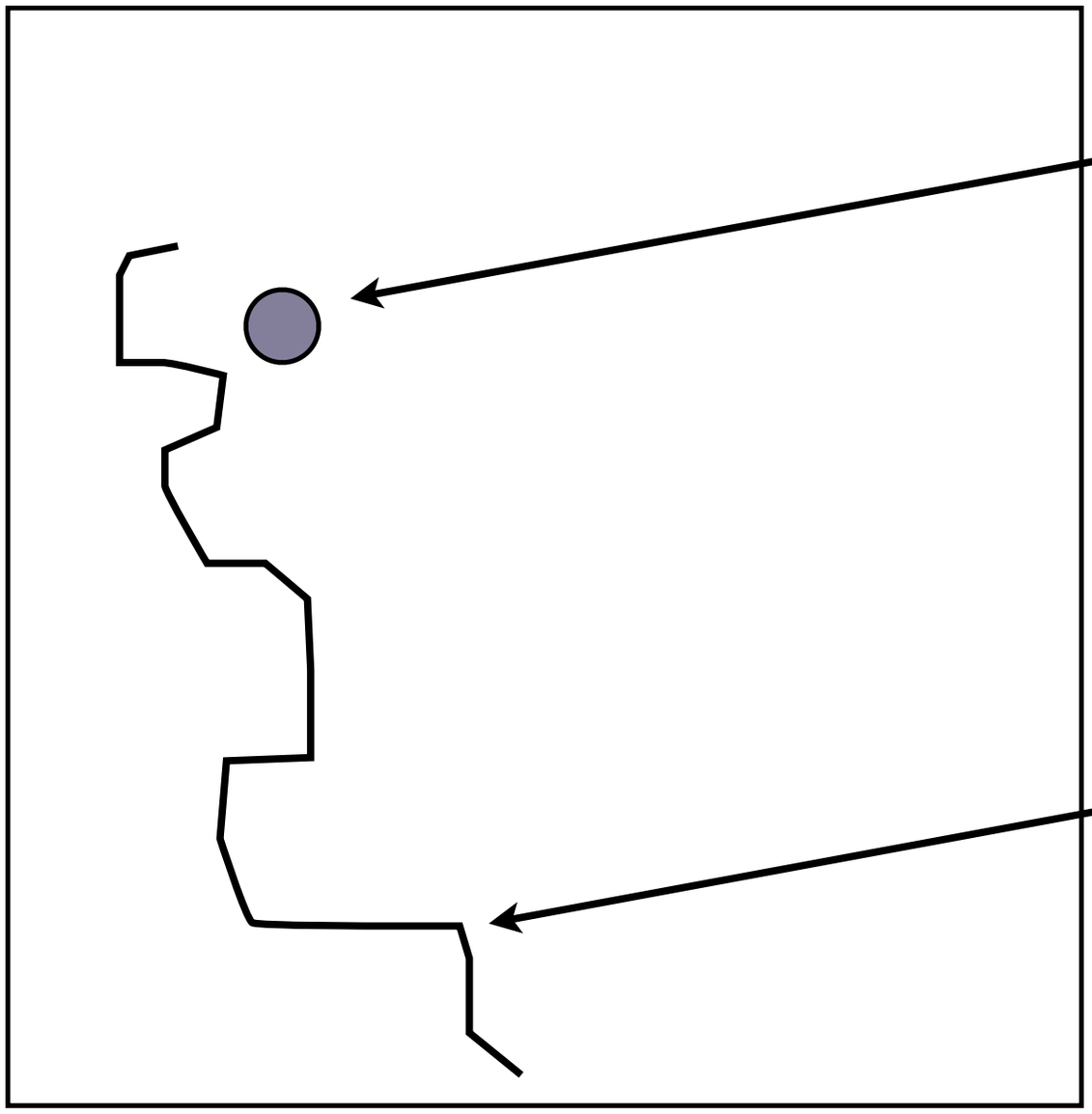
Geographical information system (GIS) works by creating a series of georeferenced overlays.



Sloj:


Quantum GIS 1.8.0-Lisboa
File Edit View Layer Settings Plugins Vector Raster Database Web Help
New
Embed Layers and Groups...
Add Vector Layer... Ctrl+Shift+V
Add Raster Layer... Ctrl+Shift+R
Add PostGIS Layers... Ctrl+Shift+D
Add SpatiaLite Layer... Ctrl+Shift+L
Add MSSQL Spatial Layer... Ctrl+Shift+M
Add WMS Layer... Ctrl+Shift+W
Add Delimited Text Layer
Create new GPX layer
Add Oracle GeoRaster Layer...
Add WFS Layer...
Copy style
Paste style
Open Attribute Table
Save Edits
Toggle Editing
Save As...
Save Selection as Vector File...
Remove Layer(s) Ctrl+D
Set CRS of Layer(s) Ctrl+Shift+C
Set Project CRS from Layer
Properties...
Query...
Labeling
Add to Overview Ctrl+Shift+O
Add All to Overview
Remove All from Overview
Show All Layers Ctrl+Shift+U
Hide All Layers Ctrl+Shift+H
N208A
1499_00
1498_00
1497_00
razrezTT
zdr_Podrocje_Srheologija
1496_00
1495_00
Control rendering order
1:5.000
(91) 3214:586 = 18.23%
QGIS rocks!
Coordinate: 560144,184552
Scale 1:1195025
Render
EPSG:3794

Locational component



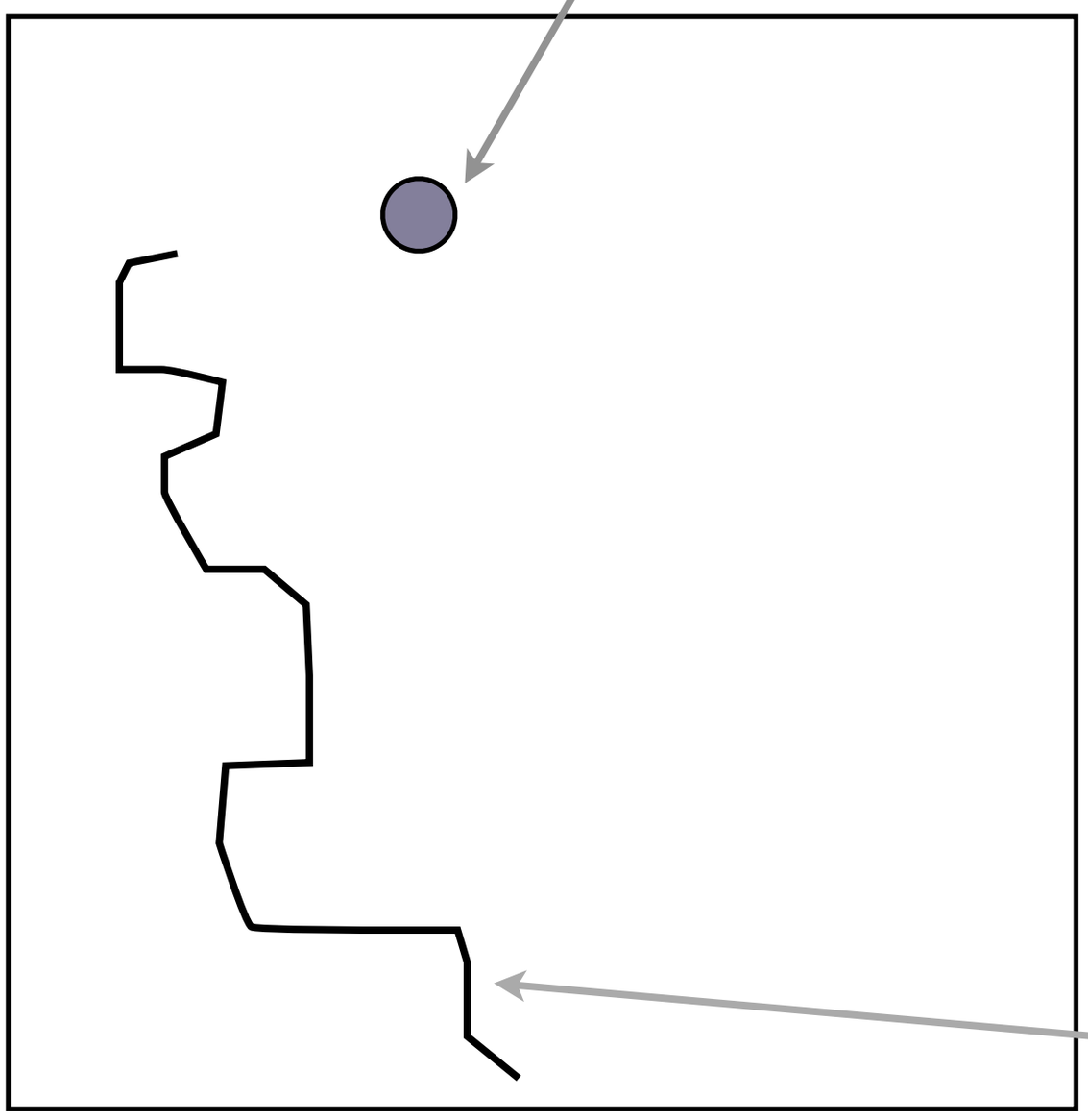
Point,1201,6234

Line,
1134,6240,
1221,6220,
1211,6212
....

Attribute component

id,type,date,name

1, archaeological site, Roman, Ammaia



id,type,name

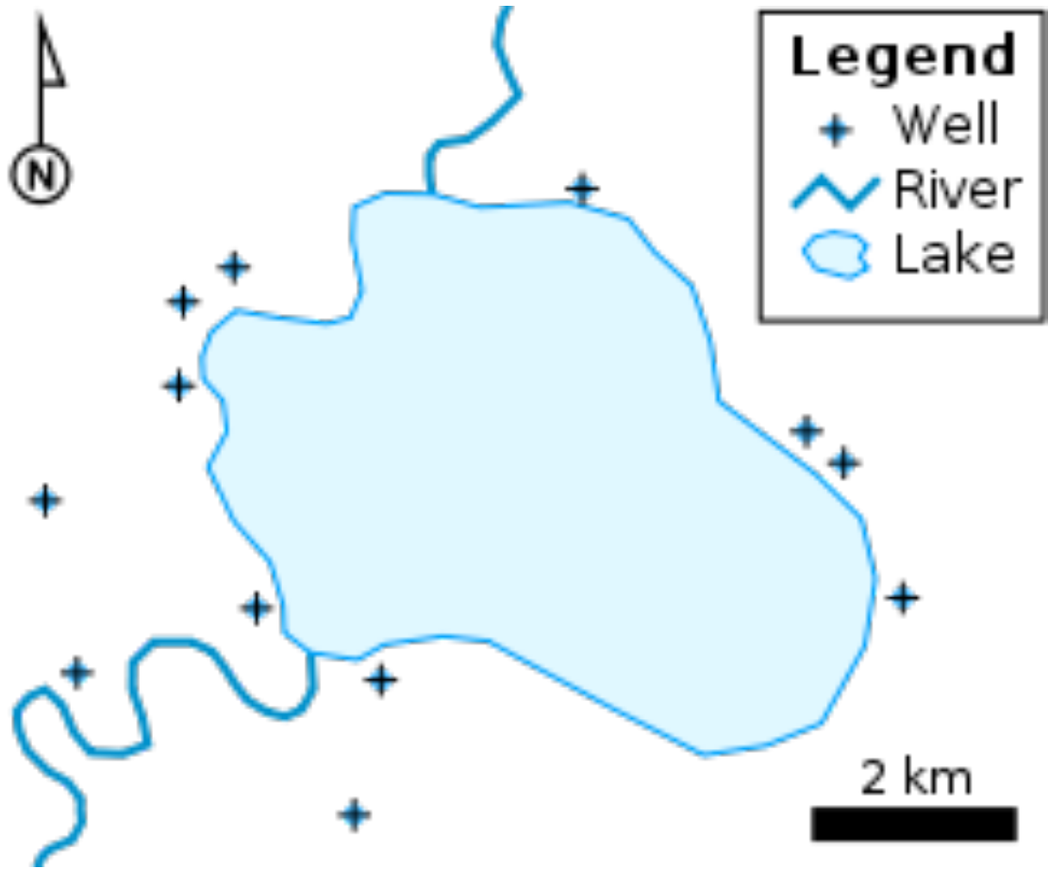
2, river,Rio Sever

ESRI shapefile format

- .shp — shape format; the feature geometry itself
- .shx — shape index format; a positional index of the feature geometry to allow seeking forwards and backwards quickly
- .dbf — attribute format; columnar attributes for each shape, in dBase IV format

Optional files :

- .prj — projection format; the coordinate system and projection information, a plain text file describing the projection using well-known text format
- .sbn and .sbx — a spatial index of the features
- .fbn and .fbx — a spatial index of the features for shapefiles that are read-only
- .ain and .aih — an attribute index of the active fields in a table or a theme's attribute table
- .ixs — a geocoding index for read-write shapefiles
- .mxs — a geocoding index for read-write shapefiles (ODB format)
- .atx — an attribute index for the .dbf file in the form of shapefile.columnname.atx (ArcGIS 8 and later)
- .shp.xml — geospatial metadata in XML format, such as ISO 19115 or other schemas
- .cpg — used to specify the code page (only for .dbf) for identifying the character encoding to be used



.shp Locational component

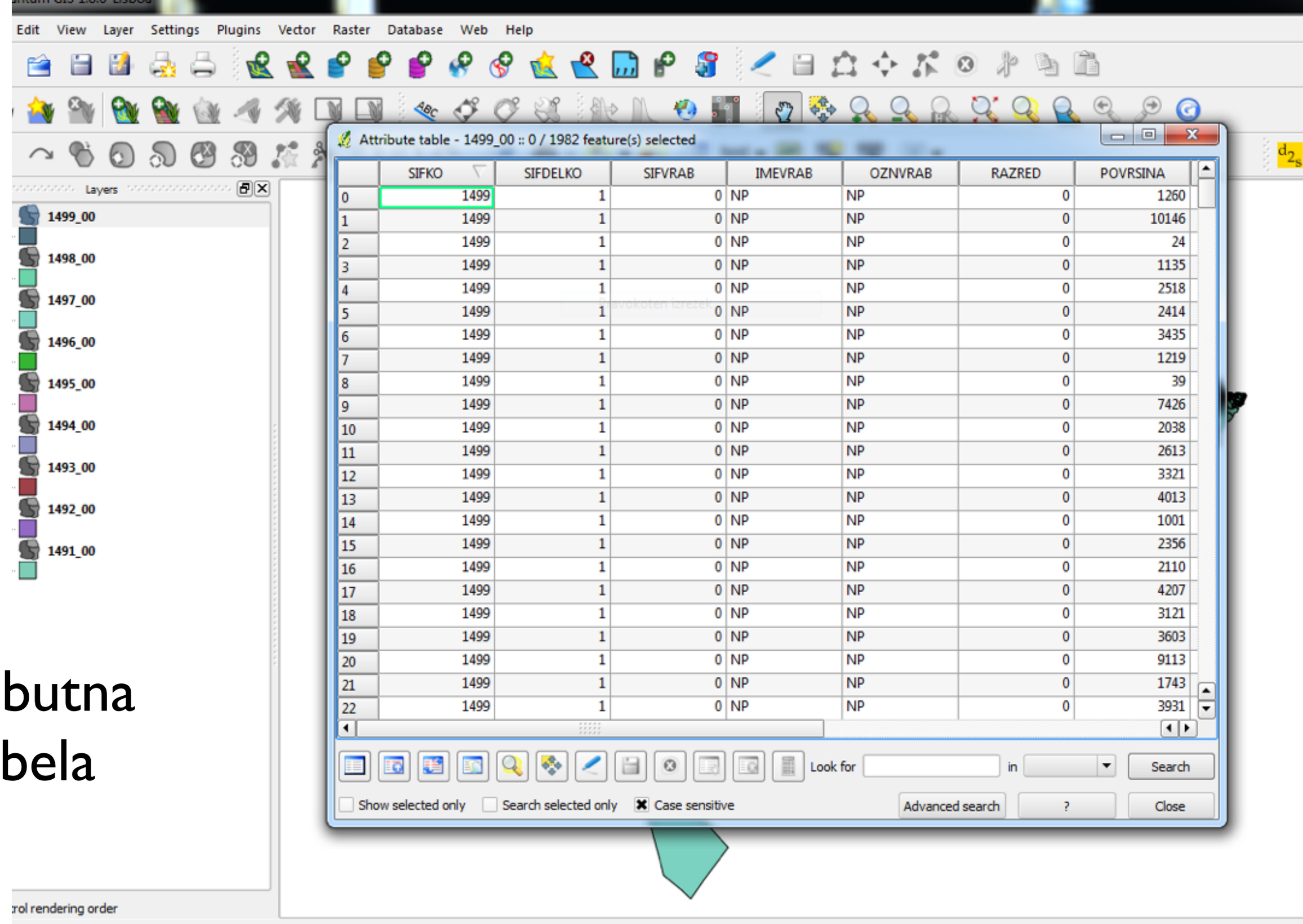
```
Line,
1134,6240,
1221,6220,
1211,6212
....
```

.idx

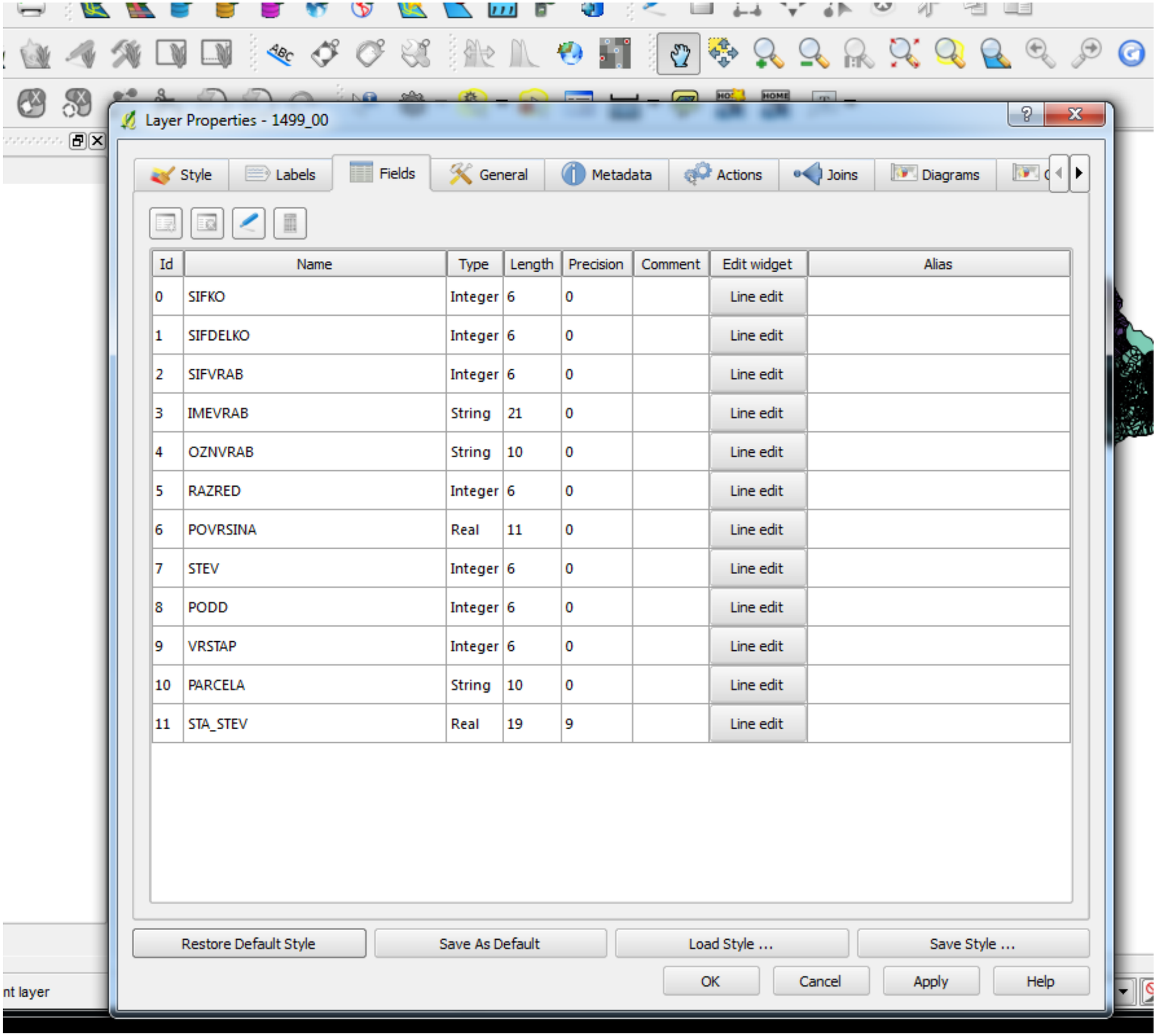
.dbf Attribute component

```
id,type,name
2, river,Rio
    Sever
```

Atributna Tabela

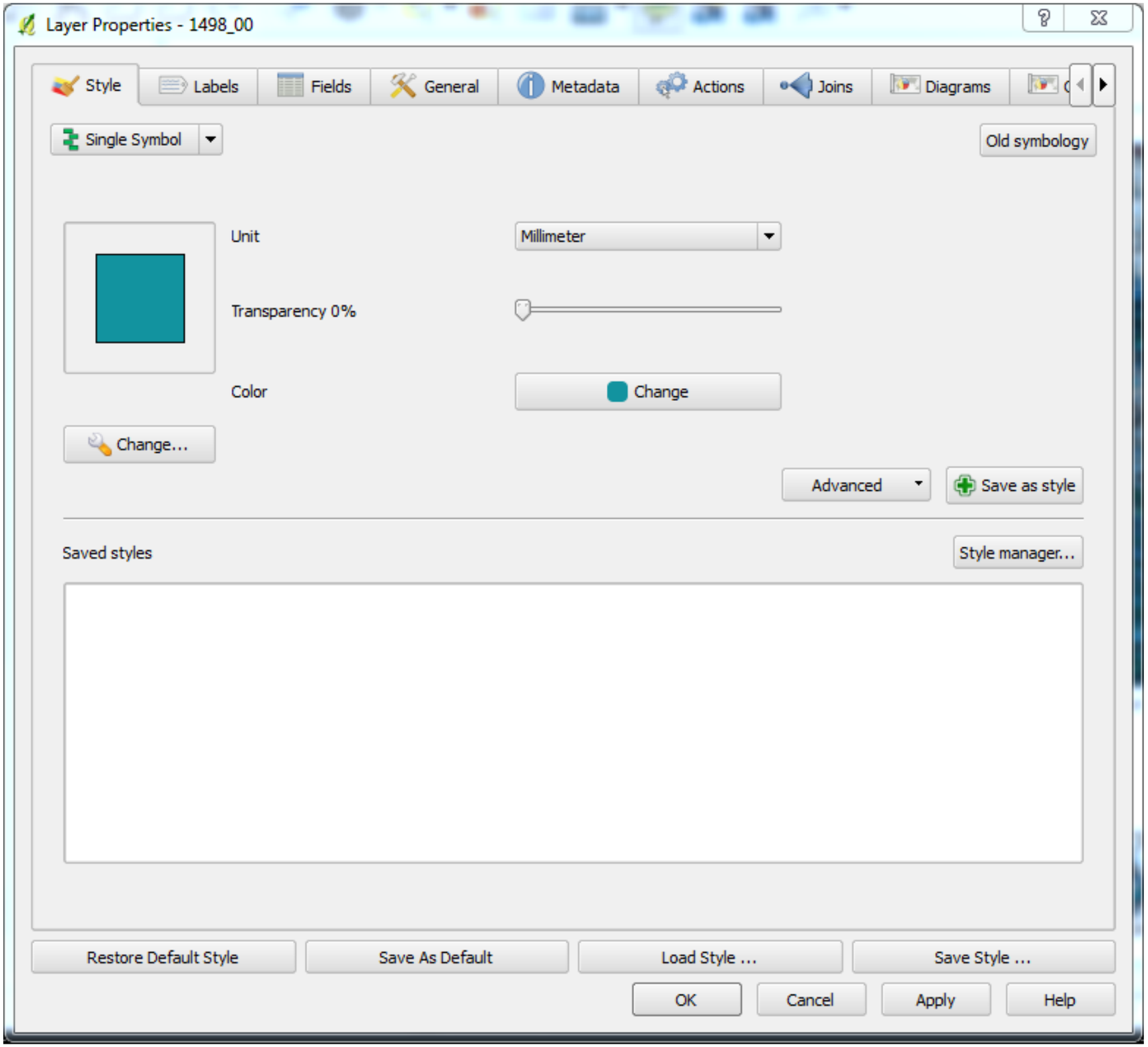


	SIFKO	SIFDELKO	SIFVRAB	IMEVRAB	OZNVRAB	RAZRED	POVRSINA
0	1499	1	0	NP	NP	0	1260
1	1499	1	0	NP	NP	0	10146
2	1499	1	0	NP	NP	0	24
3	1499	1	0	NP	NP	0	1135
4	1499	1	0	NP	NP	0	2518
5	1499	1	0	NP	NP	0	2414
6	1499	1	0	NP	NP	0	3435
7	1499	1	0	NP	NP	0	1219
8	1499	1	0	NP	NP	0	39
9	1499	1	0	NP	NP	0	7426
10	1499	1	0	NP	NP	0	2038
11	1499	1	0	NP	NP	0	2613
12	1499	1	0	NP	NP	0	3321
13	1499	1	0	NP	NP	0	4013
14	1499	1	0	NP	NP	0	1001
15	1499	1	0	NP	NP	0	2356
16	1499	1	0	NP	NP	0	2110
17	1499	1	0	NP	NP	0	4207
18	1499	1	0	NP	NP	0	3121
19	1499	1	0	NP	NP	0	3603
20	1499	1	0	NP	NP	0	9113
21	1499	1	0	NP	NP	0	1743
22	1499	1	0	NP	NP	0	3931



Id	Name	Type	Length	Precision	Comment	Edit widget	Alias
0	SIFKO	Integer	6	0		Line edit	
1	SIFDELKO	Integer	6	0		Line edit	
2	SIFVRAB	Integer	6	0		Line edit	
3	IMEVRAB	String	21	0		Line edit	
4	OZNVRAB	String	10	0		Line edit	
5	RAZRED	Integer	6	0		Line edit	
6	POVRSINA	Real	11	0		Line edit	
7	STEV	Integer	6	0		Line edit	
8	PODD	Integer	6	0		Line edit	
9	VRSTAP	Integer	6	0		Line edit	
10	PARCELA	String	10	0		Line edit	
11	STA_STEV	Real	19	9		Line edit	

Prikaz


Layer Properties - 1498_00
Style
Labels
Fields
General
Metadata
Actions
Joins
Diagrams
Single Symbol
Old symbology
Unit
Millimeter
Transparency 0%
Color
Change
Change...
Advanced
Save as style
Saved styles
Style manager...
Restore Default Style
Save As Default
Load Style ...
Save Style ...
OK
Cancel
Apply
Help

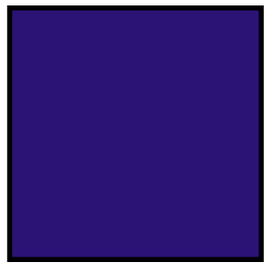
Kategorije

Vrednosti

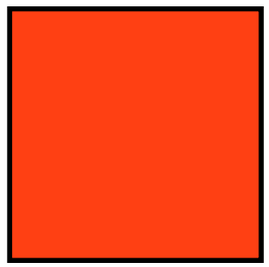
kategorija

barva

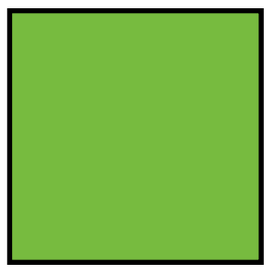
Polja →



Njive →

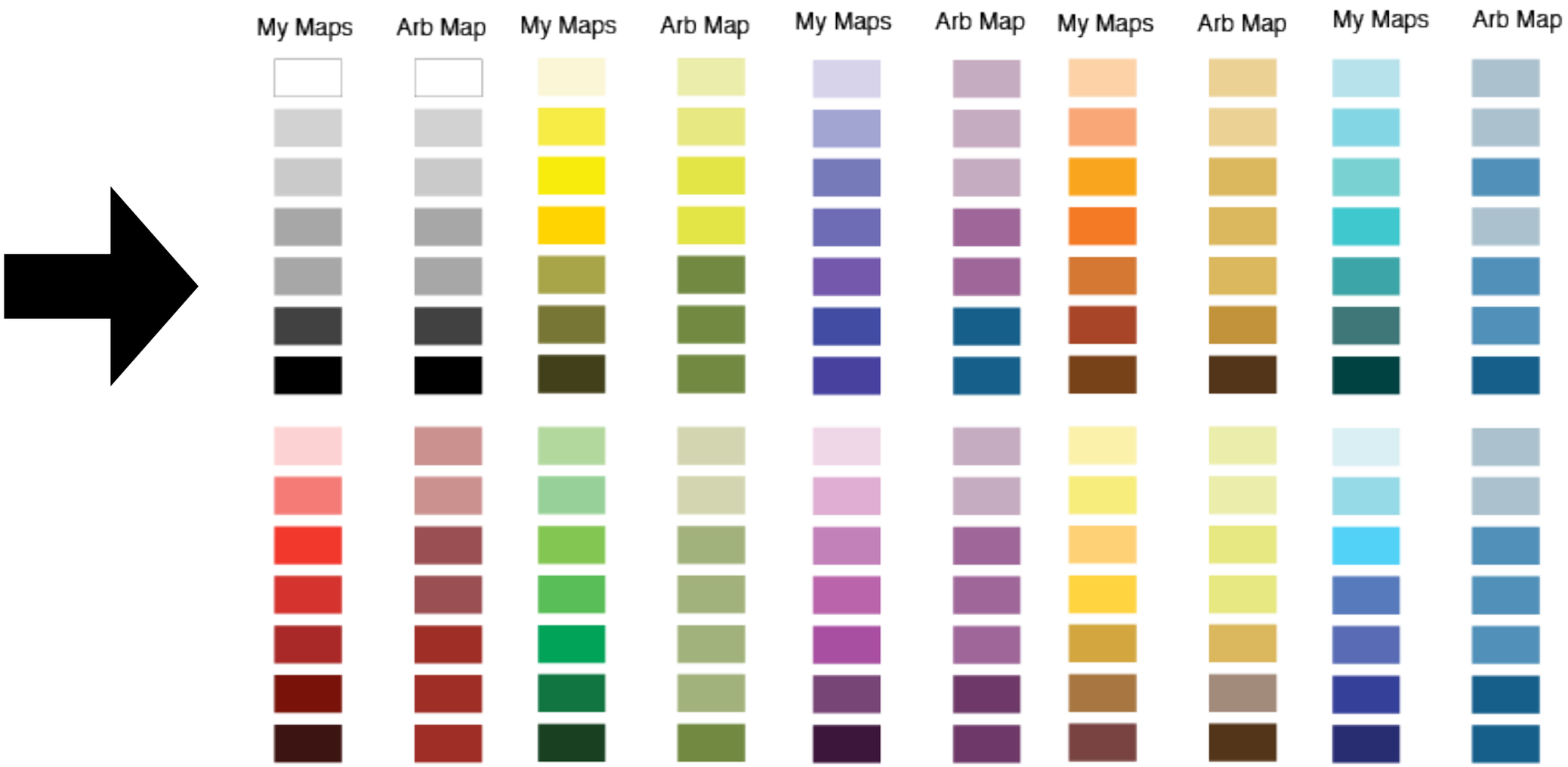


Gozd →

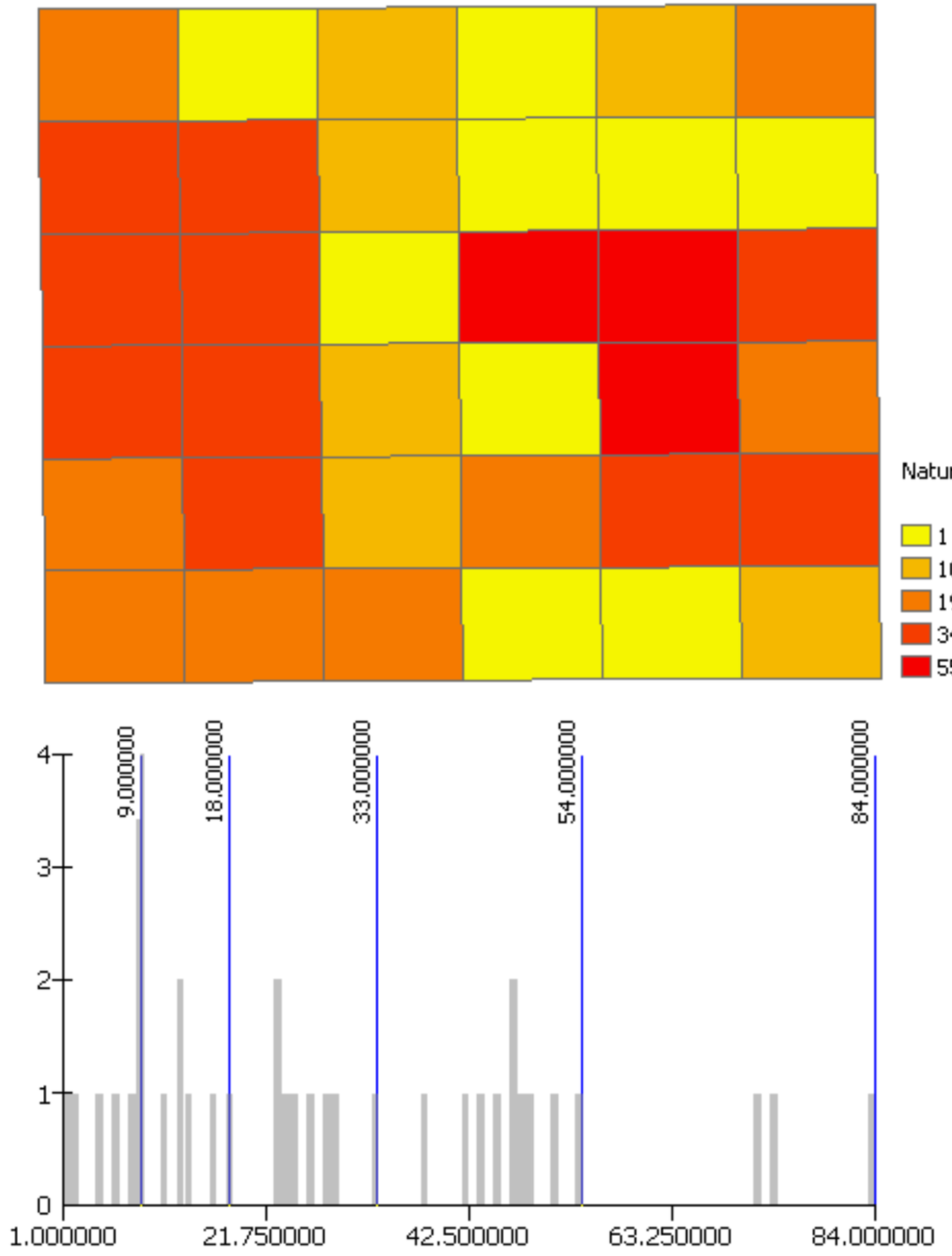


Paleta (Colour map)

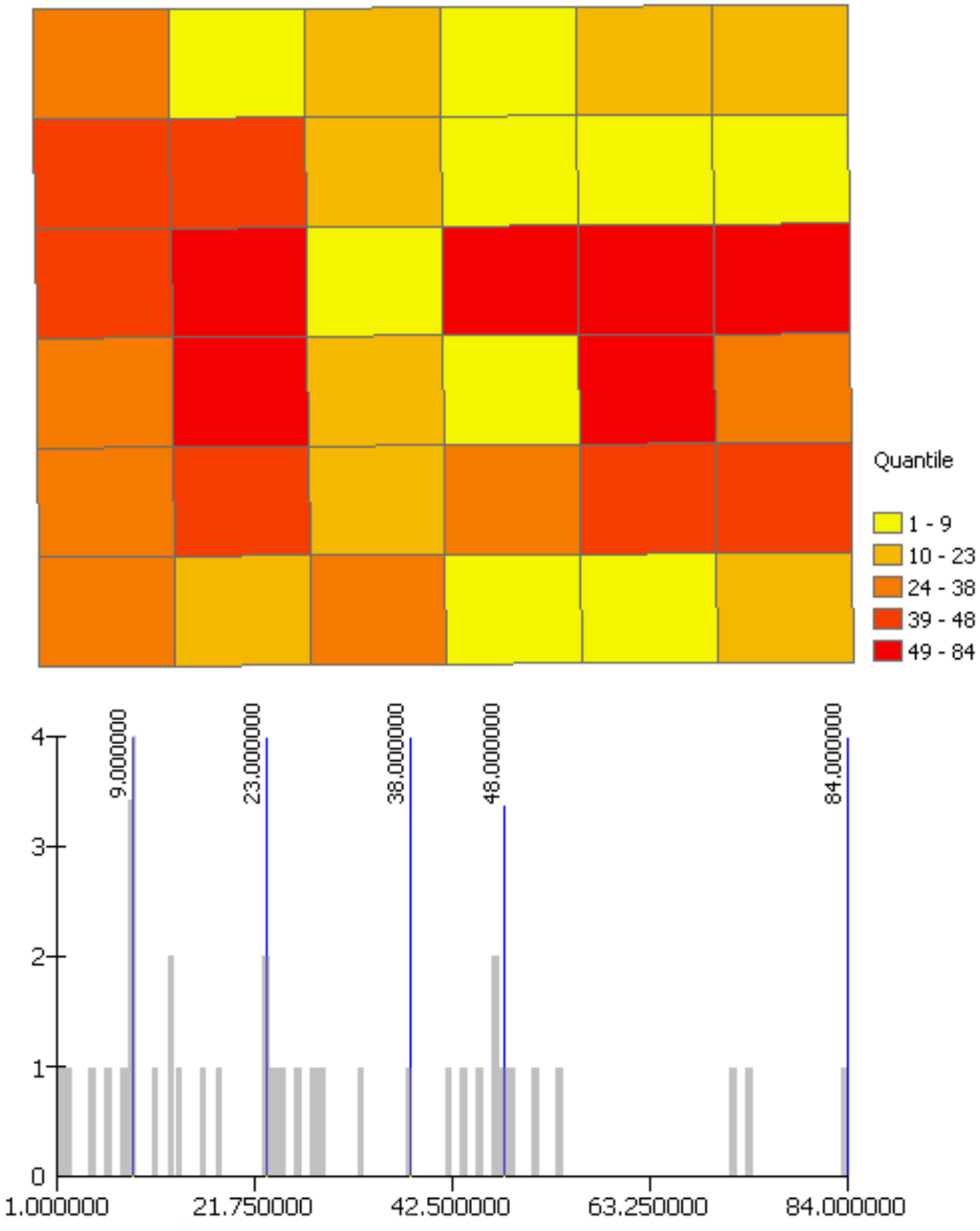
17
23
34
56
12
1
23
45
67
89
90



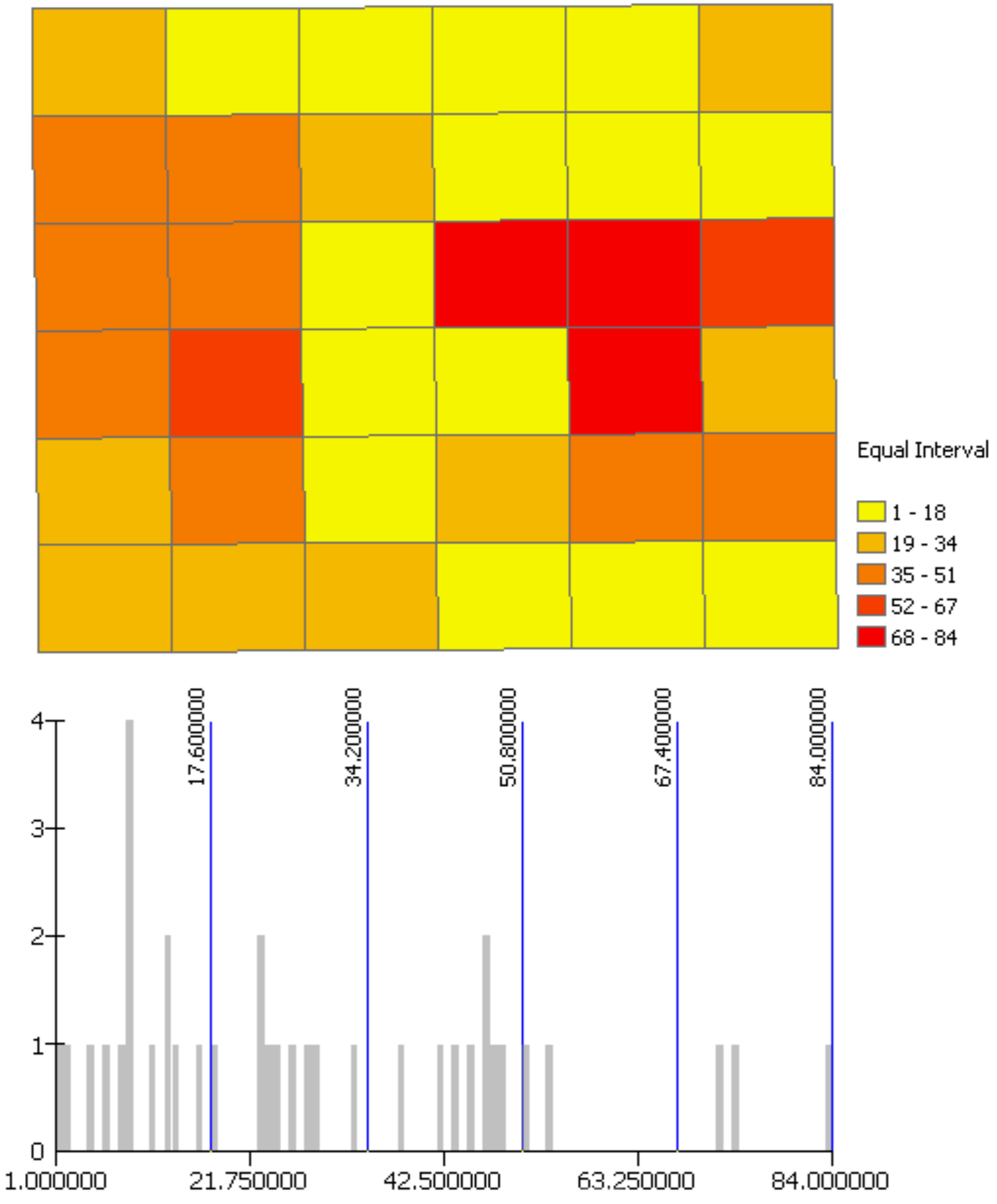
Natural intervals



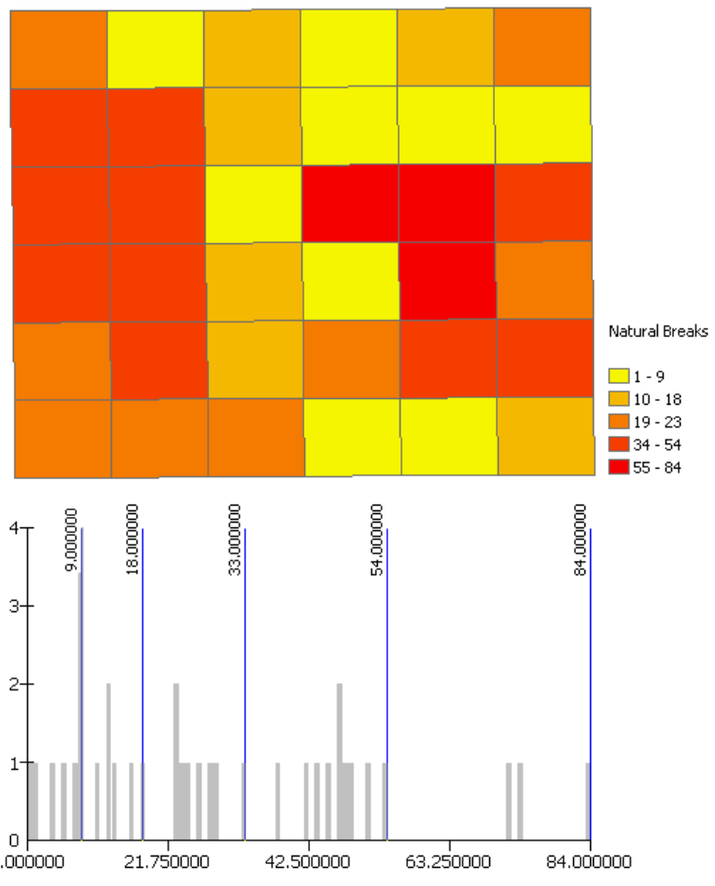
Quantiles


Quantile
1 - 9
10 - 23
24 - 38
39 - 48
49 - 84
9.000000
23.000000
38.000000
48.000000
84.000000
4
3
2
1
0
1.000000
21.750000
42.500000
63.250000
84.000000

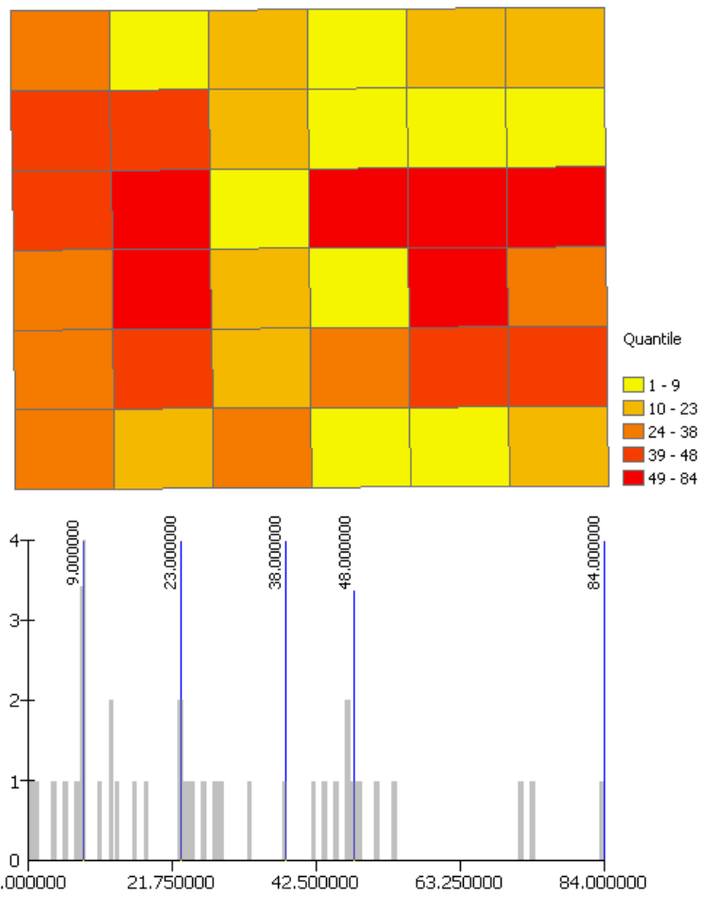
Equal intervals



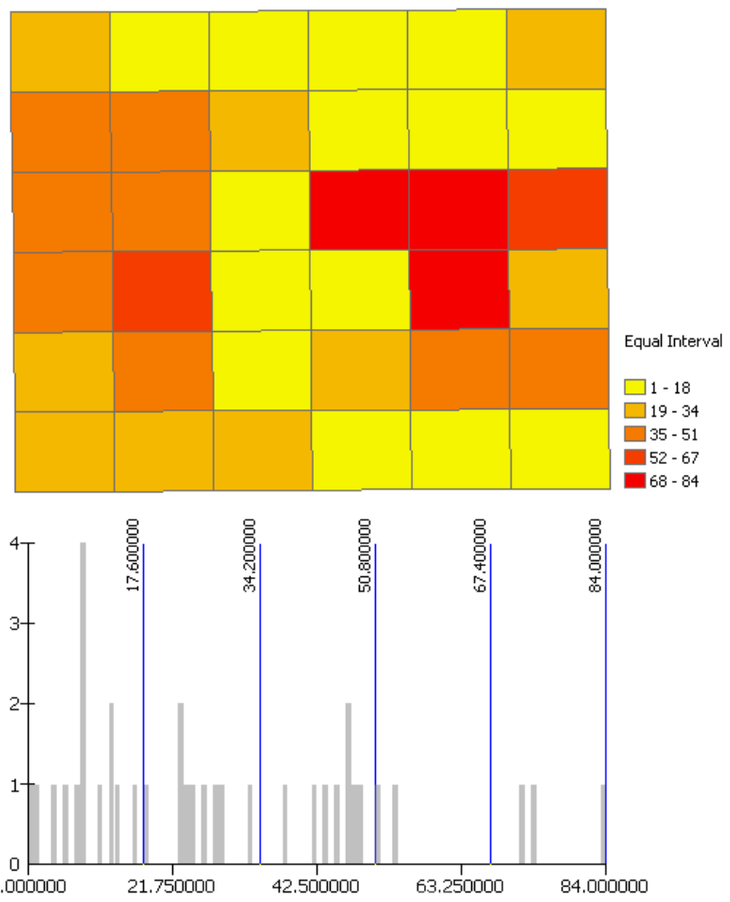
Natural intervals



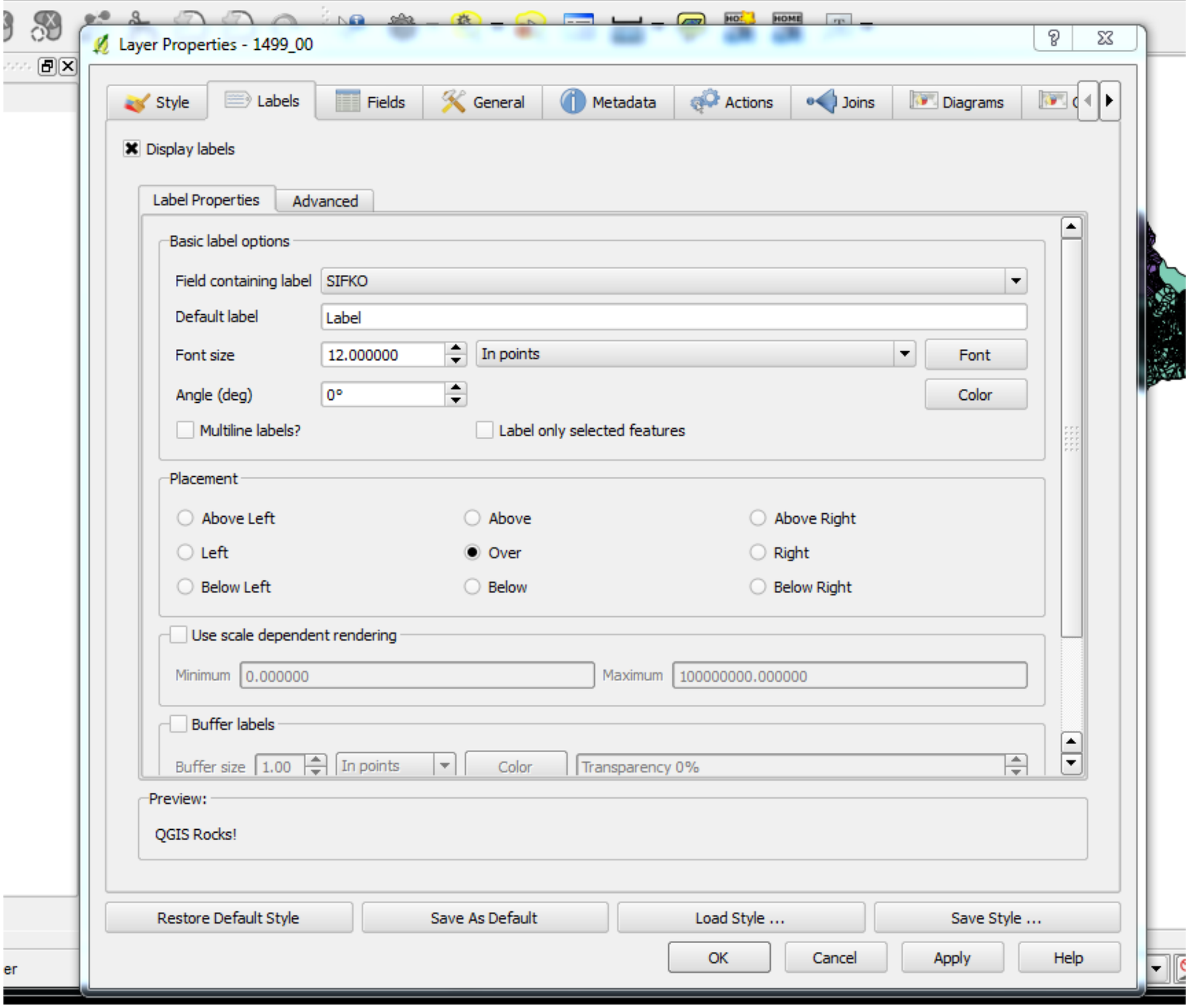
Quantiles



Equal intervals



Oznake


Layer Properties - 1499_00
Style
Labels
Fields
General
Metadata
Actions
Joins
Diagrams
Display labels
Label Properties
Advanced
Basic label options
Field containing label
SIFKO
Default label
Label
Font size
12.000000
In points
Font
Angle (deg)
0°
Color
Multiline labels?
Label only selected features
Placement
Above Left
Above
Above Right
Left
Over
Right
Below Left
Below
Below Right
Use scale dependent rendering
Minimum
0.000000
Maximum
100000000.000000
Buffer labels
Buffer size
1.00
In points
Color
Transparency 0%
Preview:
QGIS Rocks!
Restore Default Style
Save As Default
Load Style ...
Save Style ...
OK
Cancel
Apply
Help

Poizvedbe:

a) Kaj je tukaj?
b) Kje je to?

Layers

- dem
- dem
- ko_slo

Identify Results

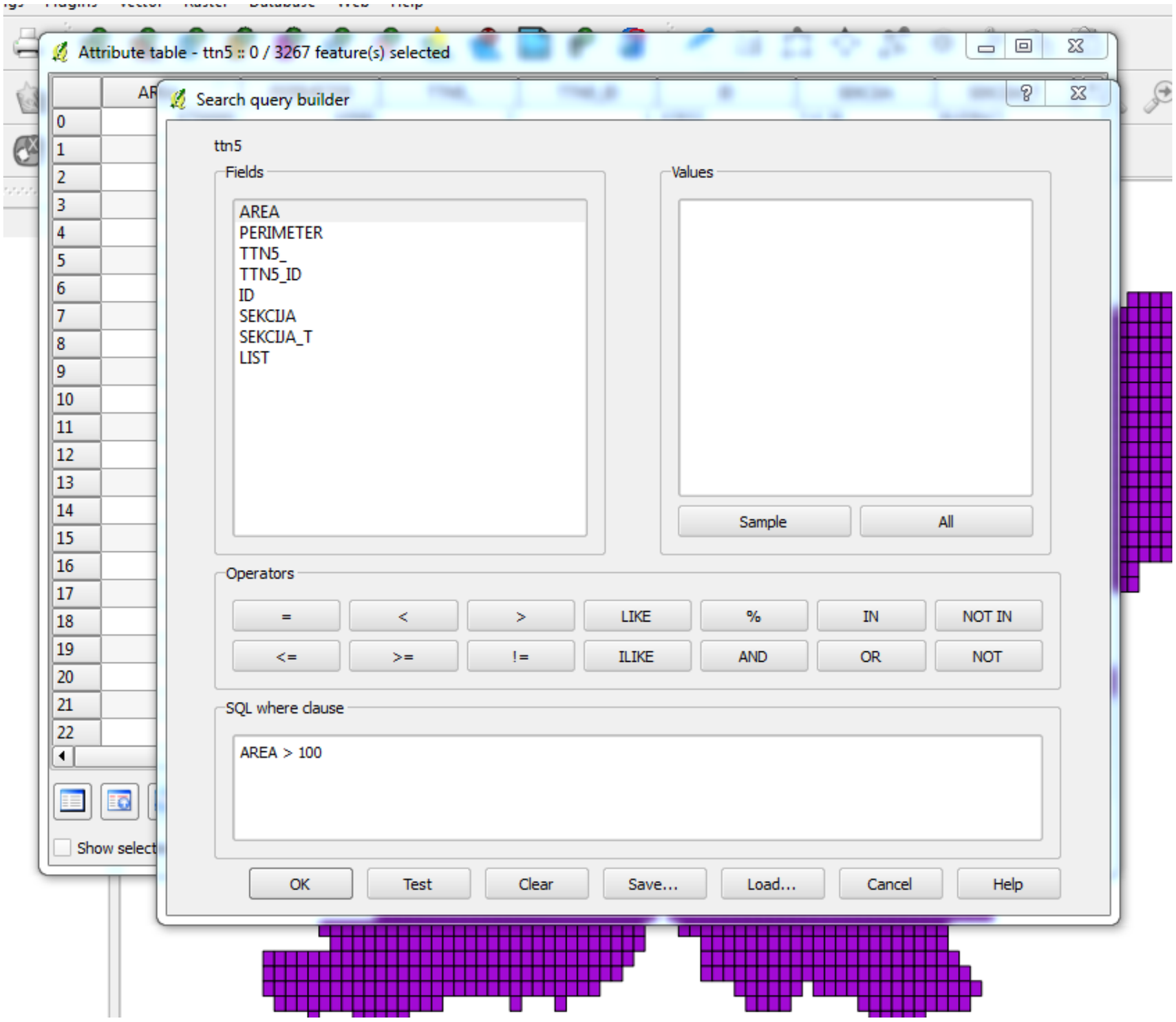
Feature	Value
0	ko_slo
(Actions)	
(Derived)	
DATSPRV	2008/02/13
DATUM	2010/11/12
Datum_uvel	2003/07/29
IMEKO	PODTURN
IMENVZD	metoda z vklopom
IMESTP	Uradno
IMEVKAT	grafièni
Ime_OGU_GP	NOVO MESTO
Ime_katast	PODTURN
MERILO	2880
SIFDELKO	1
SIFKO	1496
SIFMER	8
SIFNVZD	2
SIFSTP	3

Close Help

Control rendering order

Coordinate: 493078,47344 Scale 1:343051 Render EPSG:3794

Poizvedbe


Attribute table - ttn5 :: 0 / 3267 feature(s) selected
Search query builder
ttn5
Fields
AREA
PERIMETER
TTN5_
TTN5_ID
ID
SEKCIJA
SEKCIJA_T
LIST
Values
Sample
All
Operators
=
<
>
LIKE
%
IN
NOT IN
<=
>=
!=
ILIKE
AND
OR
NOT
SQL where clause
AREA > 100
OK
Test
Clear
Save...
Load...
Cancel
Help
Show select

TEMELJNI TOPOGRAFSKI NAČRT V MERILU 1 : 5 000

Legenda

TRENTA — Trigonometrična sekcija

List TTN 5

List TTN 10

17 — Meja in šifra občine

Pregledna karta Republike Slovenije v merilu 1: 750 000, 1999

Začasna izdaja

Izdalo in založila: Geodetska uprava Republike Slovenije. Ver: Geodetska uprava RS.
Izdelano in tisk: Inštitut za geodezijo in fotogrametrijo FGG. Gauß-Krügerjeva projekcija.
Razmnoževanje in prekrivanje karte delno ali v celoti brez odobritve Geodetske uprave Republike Slovenije je prepovedano. © Geodetska uprava Republike Slovenije

REPUBLIKA SLOVENIJA

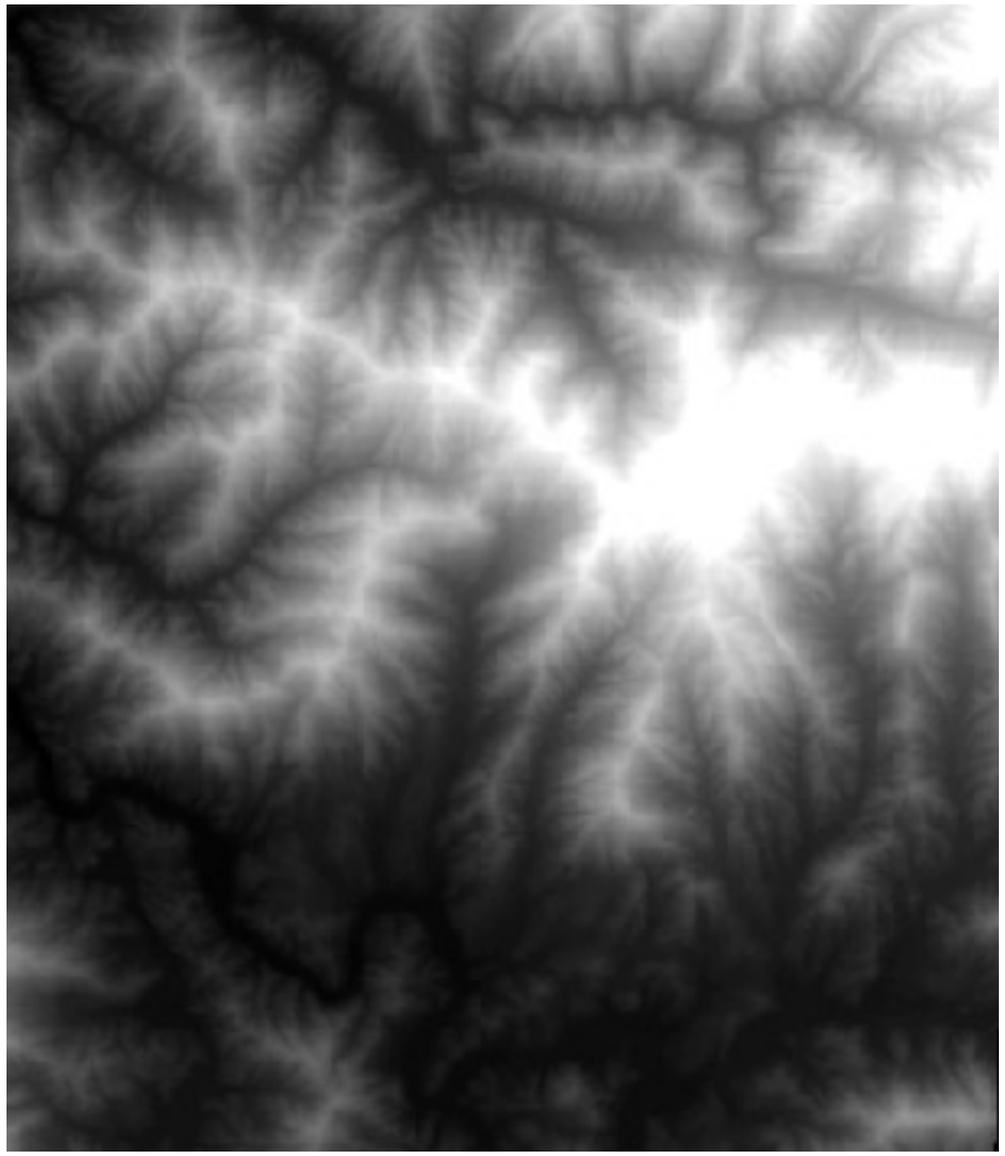
Merilo 1 : 750 000

0 km 10 20 30 40 50

Rasters

Pixel

1	1	1	1	1	1	1	3	3	3
1	1	1	1	1	1	1	3	3	3
1	1	1	1	1	1	3	3	3	3
1	1	1	2	2	2	2	3	3	3
1	1	1	2	2	2	2	3	3	3
1	1	1	2	2	2	2	3	3	3
1	1	1	1	2	2	2	3	3	3
1	1	1	1	1	1	3	3	3	3
1	1	1	1	1	1	1	3	3	3
1	1	1	1	1	1	1	1	3	3



Raster data formats

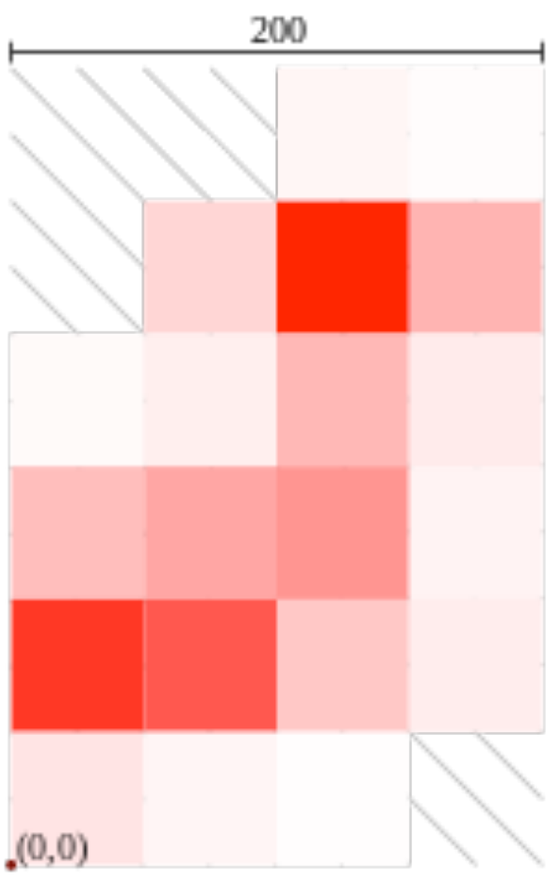
GeoTIFF,
TIFF + world file

Tiff file

World file

```
10000
0
0
-10000
-3683154.58
4212096.53
```

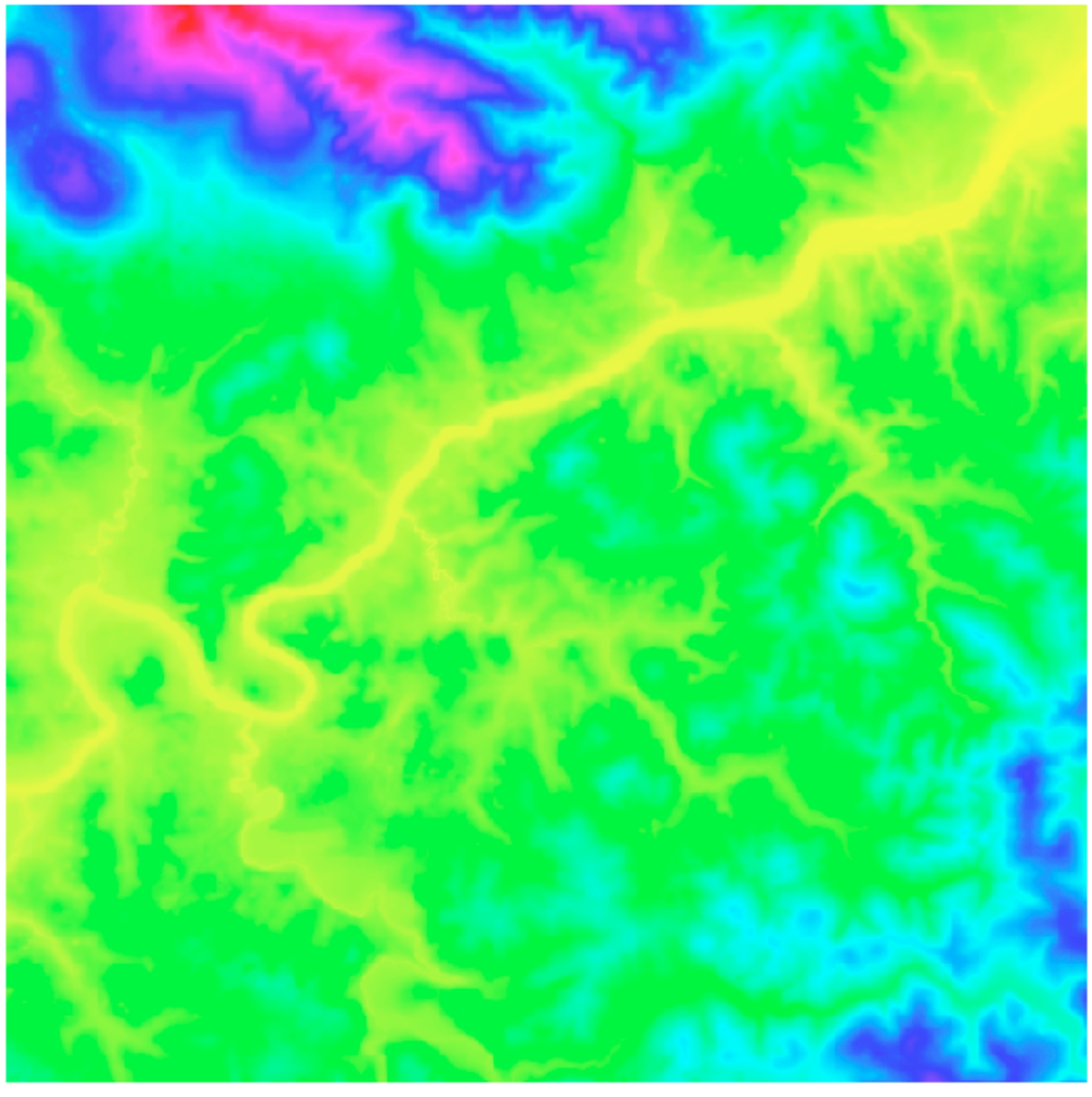
ESRI grid format

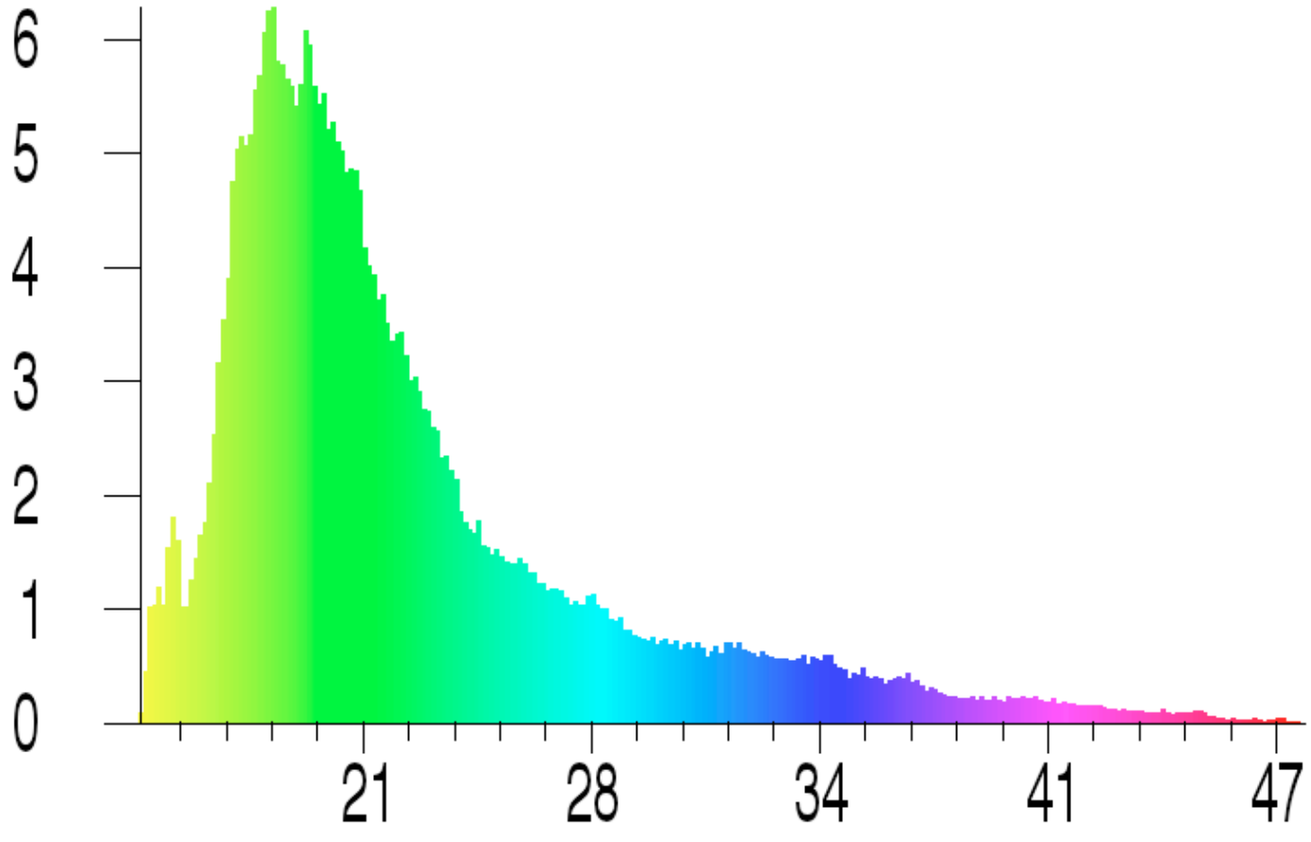


	25	75	125	175
275	NA	NA	5	2
225	NA	20	100	36
175	3	8	35	10
125	32	42	50	6
75	88	75	27	9
25	13	5	1	NA

```
ncols          4
nrows          6
xllcorner      0.0
yllcorner      0.0
cellsize       50.0
NODATA_value   -9999
-9999 -9999 5 2
-9999 20 100 36
3 8 35 10
32 42 50 6
88 75 27 9
13 5 1 -9999
```

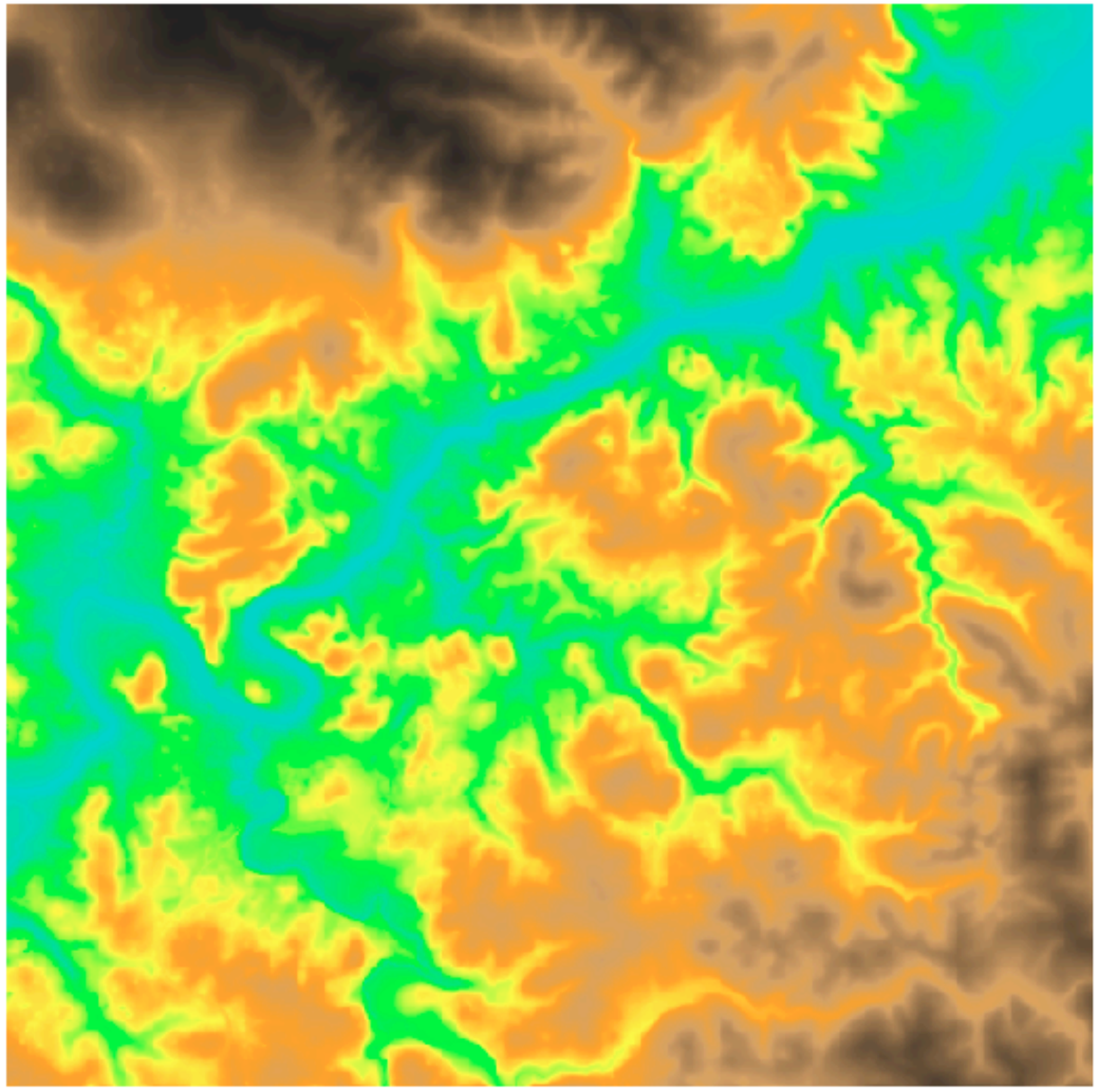
Raster histogram

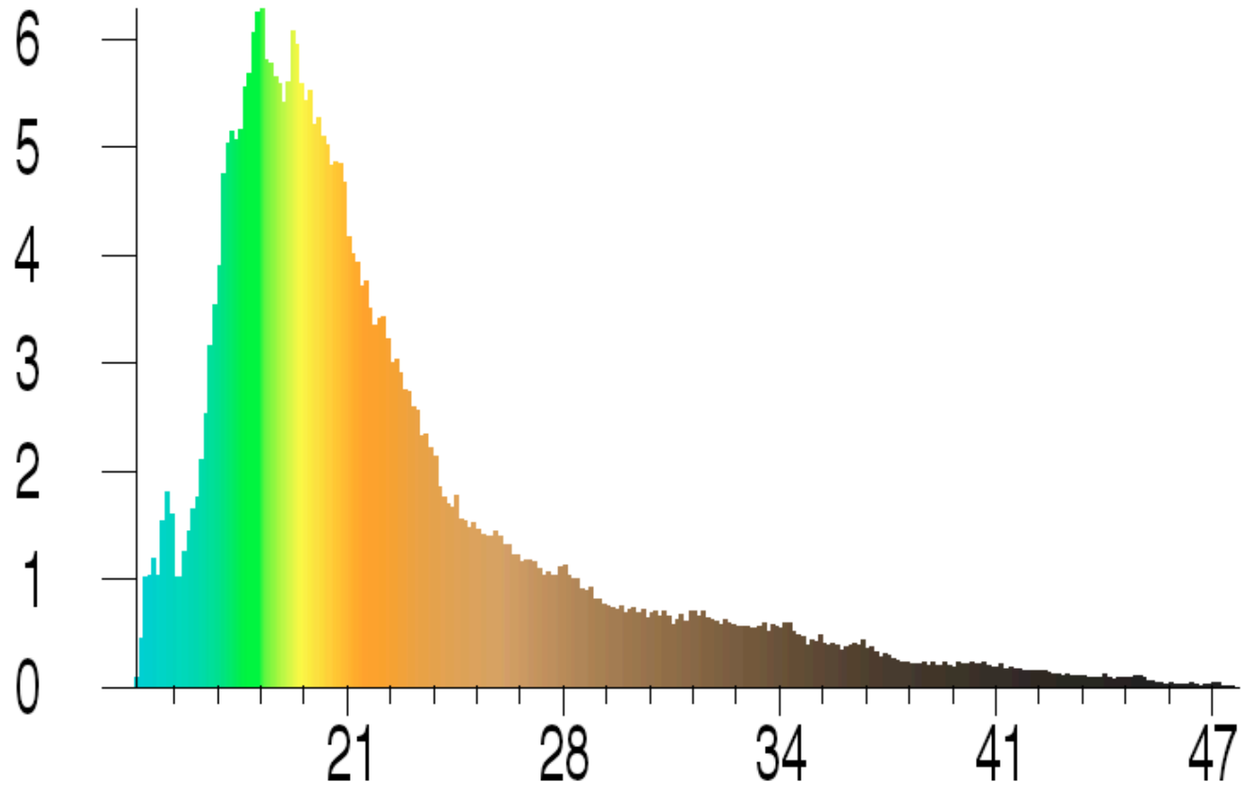




X-AXIS: Cell Values in tens
Y-AXIS: Number of cells in thousands

Raster histogram

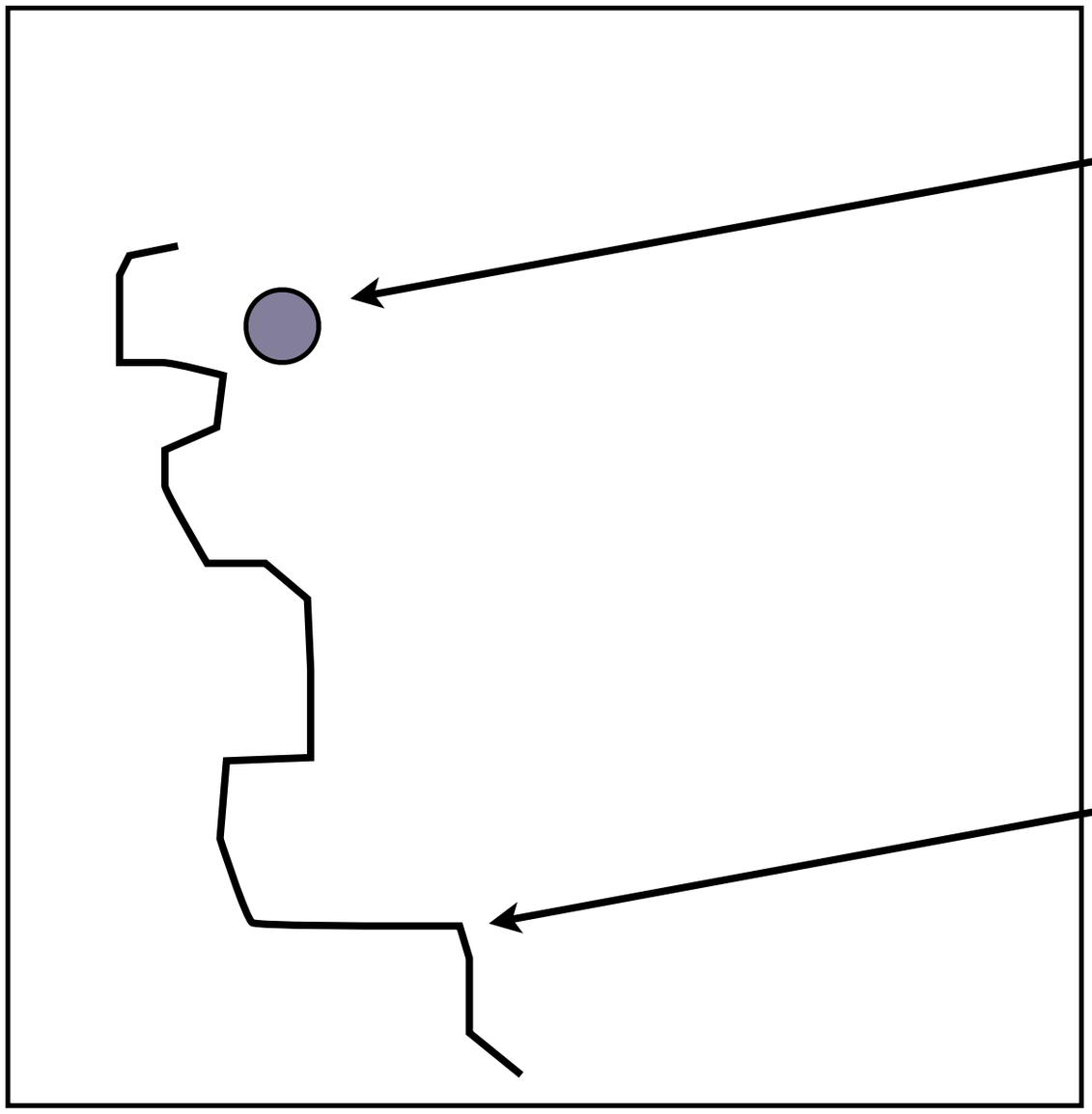




X-AXIS: Cell Values in tens
Y-AXIS: Number of cells in thousands

Povezovanje z zunanjimi bazami

Locational component



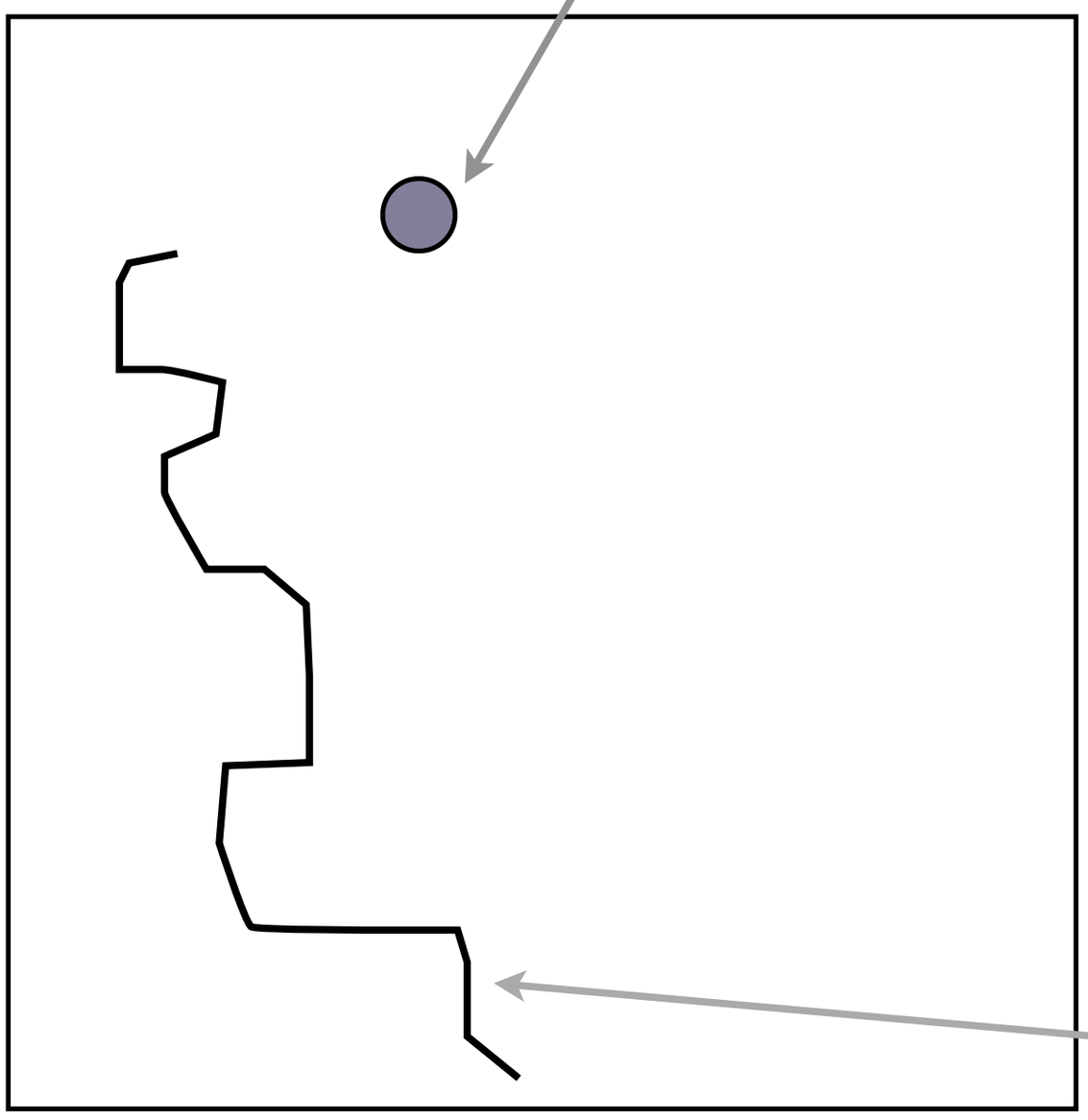
Point,1201,6234

Line,
1134,6240,
1221,6220,
1211,6212
....

Attribute component

id,type,date,name

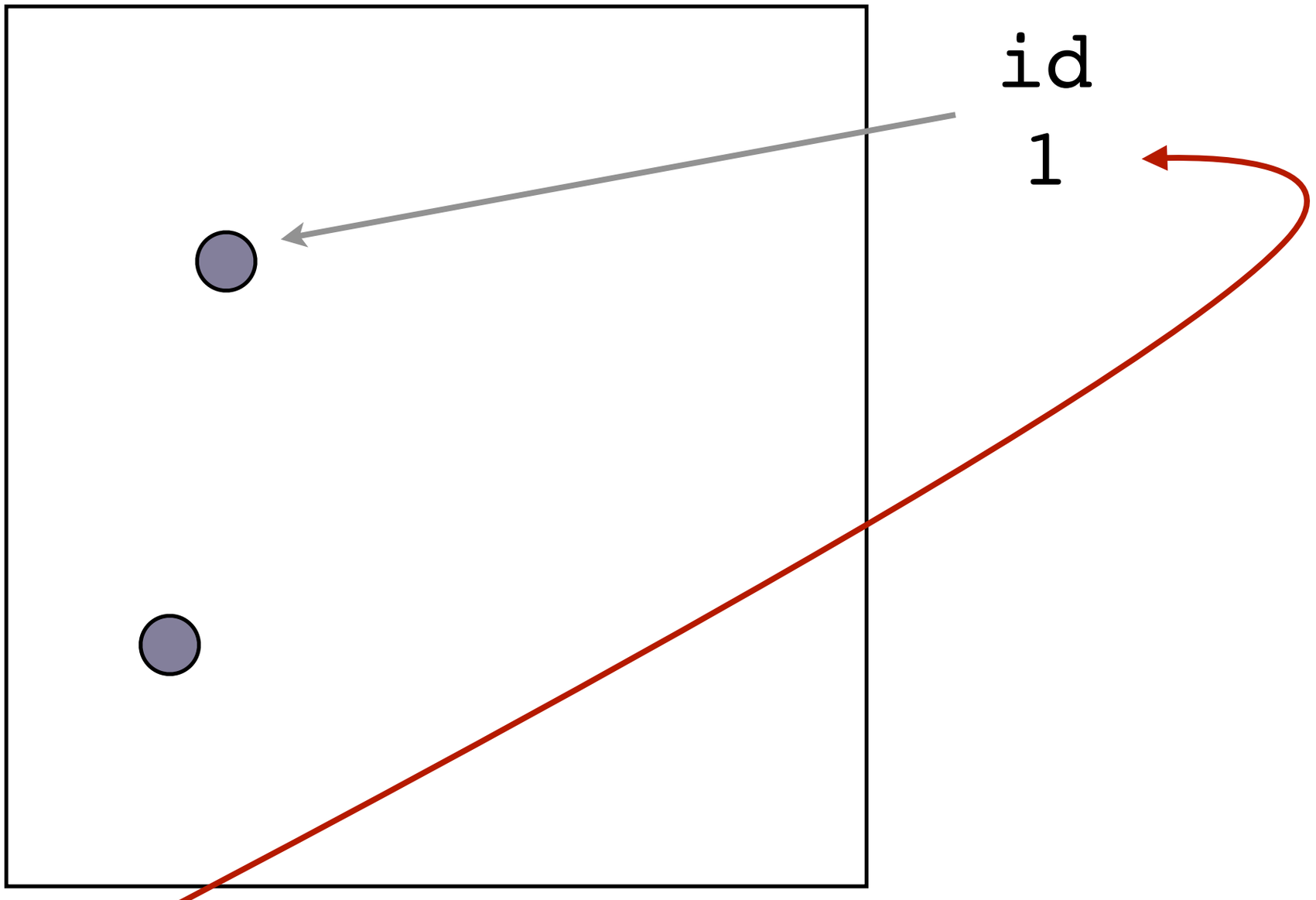
1, archaeological site, Roman, Ammaia



id,type,name

2, river,Rio Sever

Linking with external databases




```
id, name, type,no_amphorae,no_coarseware
1,Ammaia,1256,7654
```

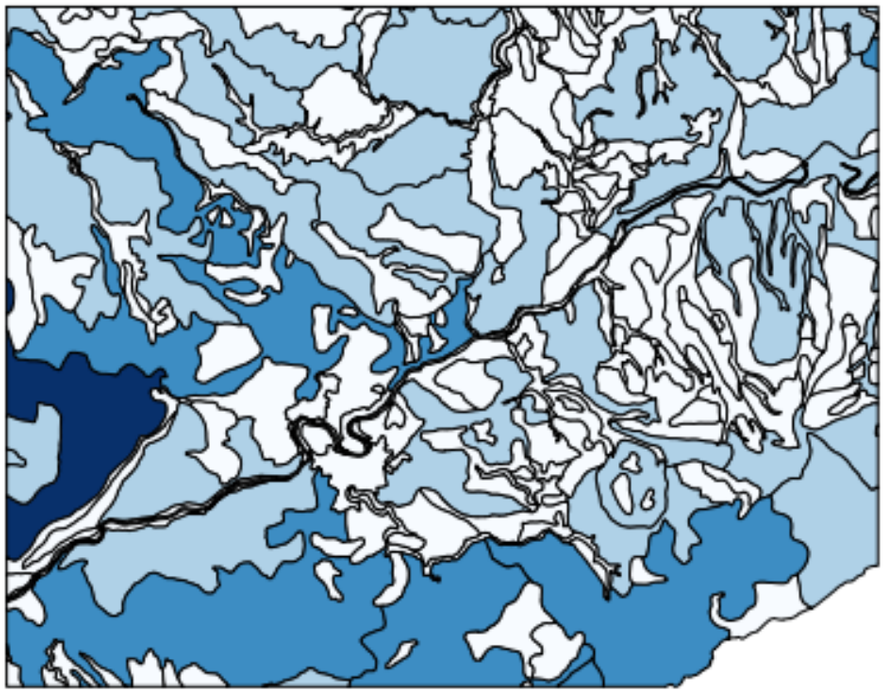
Quantum GIS 1.8.0-Lisboa

File Edit View Layer Settings Plugins Vector Raster Database Web Help

Layers

- dem
- dem
- PedokartografskeEnote
- pedology

Control rendering order



Coordinate: 497479,82739 Scale 1:250864 Render EPSG:3794

Quantum GIS 1.8.0-Lisboa

File Edit View

Layer Properties - pedology

Style | Labels | Fields | General | Metadata | Actions | Joir

Id	Name	Type	Length	Precision	Comment	Edit widget	Alias
0	AREA	Real	18	6		Line edit	
1	PERIMETER	Real	18	6		Line edit	
2	PK25SLO_2_	Real	18	6		Line edit	
3	PK25SLO_21	Real	18	6		Line edit	
4	PKE	Real	18	6		Line edit	
5	HA	Real	18	6		Line edit	
6	ID	Integer	5	0		Line edit	

Restore Default Style | Save As Default | Load Style ... | Save Style ...

OK | Cancel | Apply | Help

dem
dem
Pedokarto
pedolc

Control rendering

Toggles the editing st

1:250864 | Render | EPSG:3794

Quantum GIS 1.8.0-Lisboa

File Edit View Layer Settings Plugins Vector Raster Database Web Help

Layers

- dem
- dem
- PedokartografskeEnote
- pedology

Control rendering order

Attribute table - PedokartografskeEnote :: 0 / 1861 feature(s) selected

	PKE	PKET	PSE1	PSE1T	PROCENT1	PSE2	PSE2T
0	0	NULL	0	NULL	0	0	NULL
1	1	LITOSOL,KARB....	1	LITOSOL,KARB....	100	0	NULL
2	2	LITOSOL,KARB....	2	LITOSOL,KARB....	100	0	NULL
3	3	LITOSOL,KARB....	3	LITOSOL,KARB....	100	0	NULL
4	4	LITOSOL,KARB....	4	LITOSOL,KARB....	100	0	NULL
5	5	LITOSOL,EVT./B...	5	LITOSOL,EVT./B...	100	0	NULL
6	6	LITOSOL,EVT./...	6	LITOSOL,EVT./...	100	0	NULL
7	7	LITOSOL,EVT./P...	7	LITOSOL,EVT./P...	100	0	NULL
8	8	LITOSOL,EVT./...	8	LITOSOL,EVT./...	100	0	NULL
9	9	LITOSOL,DIS./KI...	9	LITOSOL,DIS./KI...	100	0	NULL
10	10	LITOSOL,DIS./P...	10	LITOSOL,DIS./P...	100	0	NULL
11	11	LITOSOL,DIS./O...	11	LITOSOL,DIS./O...	100	0	NULL
12	12	REGOSOL,KARB...	12	REGOSOL,KARB...	100	0	NULL
13	13	REGOSOL,KARB...	13	REGOSOL,KARB...	100	0	NULL
14	14	REGOSOL,EVT./...	14	REGOSOL,EVT./...	100	0	NULL
15	15	REGOSOL,EVT./...	15	REGOSOL,EVT./...	100	0	NULL
16	16	REGOSOL,DIS./...	16	REGOSOL,DIS./...	100	0	NULL
17	17	REGOSOL,DIS./...	17	REGOSOL,DIS./...	100	0	NULL
18	18	REGOSOL,DIS./...	18	REGOSOL,DIS./...	100	0	NULL
19	19	REGOSOL,DIS./...	19	REGOSOL,DIS./...	100	0	NULL
20	20	KOLUVIALNO-...	20	KOLUVIALNO-...	100	0	NULL
21	21	KOLUVIALNO-...	21	KOLUVIALNO-...	100	0	NULL
22	22	KOLUVIALNO-...	22	KOLUVIALNO-...	100	0	NULL

Look for in Search

Show selected only Search selected only Case sensitive Advanced search ? Close

Quantum GIS 1.8.0-Lisboa

File Edit View

Layer Properties - PedokartografskeEnote

Style | Labels | Fields | General | Metadata | Actions | Joir

Id	Name	Type	Length	Precision	Comment	Edit widget	Alias
0	PKE	Integer	5	0		Line edit	
1	PKET	String	120	0		Line edit	
2	PSE1	Integer	3	0		Line edit	
3	PSE1T	String	50	0		Line edit	
4	PROCENT1	Integer	3	0		Line edit	
5	PSE2	Integer	3	0		Line edit	
6	PSE2T	String	50	0		Line edit	
7	PROCENT2	Integer	2	0		Line edit	
8	PSE3	Integer	3	0		Line edit	
9	PSE3T	String	50	0		Line edit	
10	PROCENT3	Integer	2	0		Line edit	
11	INKLUZIJE	Integer	3	0		Line edit	
12	FAO	String	3	0		Line edit	

Restore Default Style | Save As Default | Load Style ... | Save Style ...

OK | Cancel | Apply | Help

dem
dem
Pedokarto
pedolo

Control rendering

Toggles the editing st

1:250864 | Render | EPSG:3794

Quantum GIS 1.8.0-Lisboa

File Edit View

Layer Properties - pedology

Style | Labels | Fields | General | Metadata | Actions | Joins

Join layer	Join field	Target field

Restore Default Style | Save As Default | Load Style

OK | Cancel | Apply | Help

Add vector join

Join layer: PedokartografskeEnote

Join field: PKE

Target field: ID

Cache join layer in virtual memory

Create attribute index on join field

OK | Cancel

dem

dem

Pedokarto

pedolc

Control rendering

Toggles the editing st

1:250864 | Render | EPSG:3794

Podatki

https://ge.tt/6lOmrxQ/v/0?c