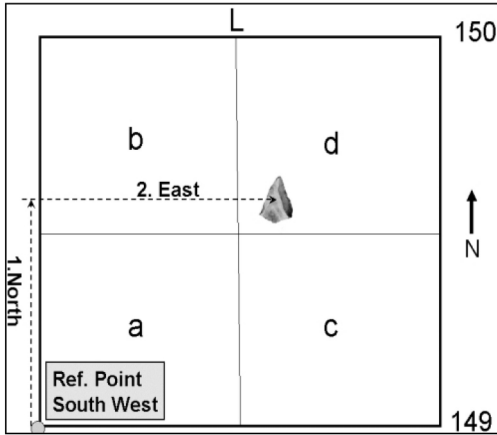




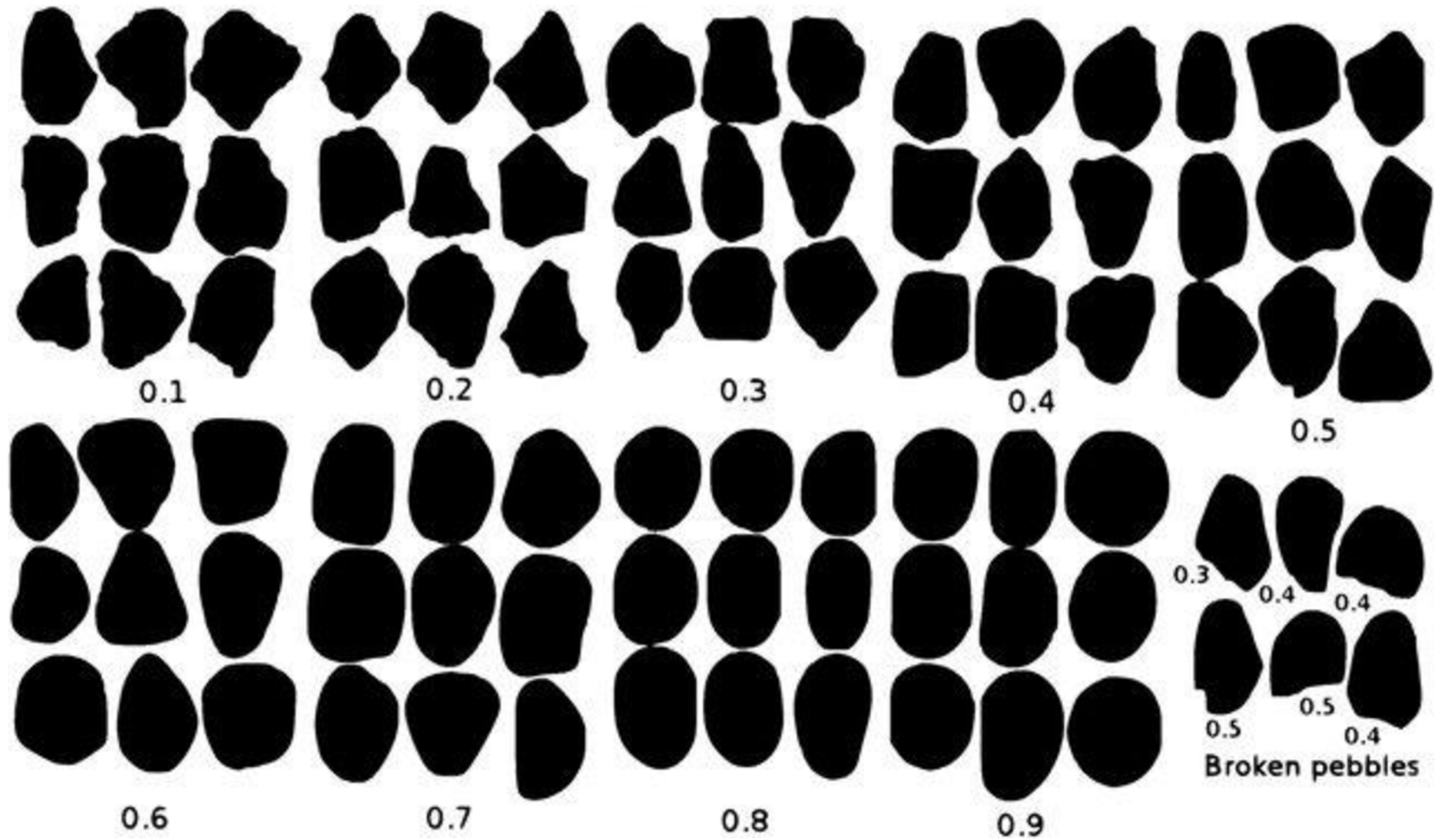
# Excavation Daily Page 2017

**Date:** \_\_\_\_\_ / 9 / 2017  
**Excavator:** \_\_\_\_\_  
**Area:** \_\_\_\_\_  
**Square** \_\_\_\_\_  
**Layer:** \_\_\_\_\_



**Example – Square L150-d Find Coordinates**

		SubSq. a	SubSq. b	SubSq. c	SubSq. d	Buckets
<b>Spit #1</b>	<b>Z- start</b>					
	<b>Z - end</b>					
<b>Description &amp; Remarks:</b>						
		SubSq. a	SubSq. b	SubSq. c	SubSq. d	Buckets
<b>Spit #2</b>	<b>Z- start</b>					
	<b>Z - end</b>					
<b>Description &amp; Remarks:</b>						
<b>General bag – date – Square – Sub-Square – Layer – Level Top – Level bottom – Excavator Name – type of find: Flint – Basalt - Limestone – Charcoal – Bone – Wood - Other</b>						



Appendix 2. Krumbein's angularity and roundness scale (Krumbein 1941 in Cruz *et al.* 2018, 29, Fig. 1.).

Site	Location	Period	Freshwater/ saltwater	Number of notched pebbles	Side-notched, end- notched, both- notched, atypical	Raw material	Manufacturing technique	Weight (avg) in grams	Length (avg of max) in mm	Width (avg of max) in mm	Thickness (avg of max) in mm	Publication
Abu Hureyra	Syria	Natufian	freshwater	14 (uncertain)	side-notched	-	-	-	-	-	-	Moore, Hillman and Legge 2000, 174-176
Beisamoun	Hula valley, Israel	PPNB- PN	freshwater	96	end-notched	mainly limestone	unifacial or bifacial flaking, pecking	63.8 (stdev. 43.5)	60.2 (stdev.12.2)	40.0 (stdev. 12)	15.0 (stdev. 4.7)	Rosenberg et al. 2016
Ein Dishna	Sea of Galilee, Israel	PPNA	freshwater	151	side-notched	limestone (128), basalt (22)	bifacial flaking, pecking	60 (+-29)	38 (+-6)	-	19 (+-7)	Birkenfeld et al. 2019
Eynan	Hula valley, Israel	Natufian	freshwater	6	-	limestone	-	-	-	-	-	Valla et al. 1998, 156
Haon Beach	Sea of Galilee, Israel	(uncertain)	freshwater	55	side-notched	limestone (34), chert (16), flint (5)	pecking	277	94	68	33	Nadel and Zaidner 2002
Munhata	Israel	PN (uncertain)	freshwater	3	mainly side-notched	basalt, limestone	-	-	-	-	-	Rosenberg et al. 2016
Ohalo I	Sea of Galilee, Israel		freshwater	6	side-notched	limestone (3), basalt (3)	flaking, pecking	759	133	100	45	Nadel and Zaidner 2002
Ohalo II	Sea of Galilee, Israel	Epipalaeo- lithic	freshwater	47	side-notched	limestone, basalt	flaking, pecking	343	109	84	36	Rosenberg et al. 2016, Nadel and Zaidner 2002
Sha'ar Hagolan	Sea of Galilee, Israel	PN, Yarmukian	freshwater	36	mainly side-notched	mainly limestone	-	72,5	74	44-47	22	Rosenberg et al. 2016
Tel Beit Yerah	Sea of Galilee, Israel	Early Bronze Age	freshwater	93	notched and grooved	limestone	-	-	-	-	-	Lernau et al. 2021 Rosenberg et al. 2016
'Atlit-Yam	Carmel Coast, Israel	PPNC	saltwater	26	perforated and grooved	mainly limestone	-	100-3000	50-250	-	-	Galili <i>et al.</i> 2004

**Appendix 3.** Examples of archaeological sites with the occurrence of notched and grooved pebbles in the Levant (modified after Rosenberg *et al.* 2016, 473).

Site	Location	Period	Freshwater/ saltwater	Number of notched pebbles	Side-notched, end- notched, both- notched, atypical	Raw material	Manufacturing technique	Weight (avg) in grams	Length (avg of max) in mm	Width (avg of max) in mm	Thickness (avg of max) in mm	Publication
Skyway	Ontario, Canada	Late Woodland (500-1,000 AD)	freshwater	4,131	Mainly side-notched	siltstone, sandstone, calcareous rock	-	136.2	78.7	61.5	16.0	Prowse 2013
Lamoka Lake	New York, USA	Late Archaic (app. 4500 BP)	freshwater	over 8,000	-	-	-	-	-	-	-	Ritchie 1944 in Prowse 2010
Recliner	Ontario, Canada	Middle and Late Woodland (350 BC - 900 AD)	freshwater	345	Mainly side-notched	mainly siltstone	flaking, pecking	187.3	94.8	75.3	18.8	Prowse 2010
H.H.	Ontario, Canada	Middle Woodland (350 BC - 500 AD)	freshwater	74	Mainly side-notched	mainly siltstone	flaking, pecking	182.4	92.0	73.7	19.6	Prowse 2010
Scott O'Brian	Ontario, Canada	Middle Archaic up to Late Woodland (3,000 BC - 1650 AD)	freshwater	122	Mainly side-notched	mainly siltstone	flaking, pecking	62.3	69.5	54.24	12.2	Prowse 2010
Blue Water Bridge South	Ontario, Canada	Middle Woodland (140 - 660 AD)	freshwater	150	Mainly side-notched	mainly calcareous rock	flaking, pecking	214.3	96.0	69.7	20.2	Prowse 2010
Varden	Ontario, Canada	Princess Point (500- 1050 AD)	freshwater	66	Mainly side-notched	mainly calcareous rock	flaking, pecking	62.9	18.5	40.6	18.5	Prowse 2010
Maedun Cave	South Korea	29,000 BP	-	14	End-notched (uncertain)	limestone	-	-	-	-	-	De Cou 2018
Gò Trùng	Vietnam	Đa Bút Neolithic (7,000 - 4,500 BP)	-	105	Grooved	schist, terracotta	-	-	40-50	30-40	-	Hiep and Huffer 2015

**Appendix 4.** Examples of archaeological sites with the occurrence of notched and grooved pebbles worldwide.

Site	Location	Period	Freshwater/ saltwater	Number of notched pebbles	Side-notched, end- notched, both- notched, atypical	Raw material	Manufacturing technique	Weight (avg) in grams	Length (avg of max) in mm	Width (avg of max) in mm	Thickness (avg of max) in mm	Publication
Làng Cồng	Vietnam	Đa Bút Neolithic (7,000 - 4,500 BP)	-	7	Grooved, perforated	schist	-	-	40-50	30-40	-	Hiep and Huffer 2015
Đa Bút	Vietnam	Đa Bút Neolithic (7,000 - 4,500 BP)	-	1	Perforated	schist	-	-	40-50	30-40	-	Hiep and Huffer 2015
Cồn Cỏ Ngựa	Vietnam	Đa Bút Neolithic (7,000 - 4,500 BP)	-	4	Grooved	schist	-	-	40-50	30-40	-	Hiep and Huffer 2015
Akab	UAE	Late Neolithic (4,500-3,100 BC)	saltwater	22 (incl. line weights)	Grooved and notched	siliceous stone, sandstone	-	100-200	50-100	-	-	Lidour <i>et al.</i> 2019
Kuntasi, Lothal, Padri	India	Harappan (3,300- 1,300 BC)	freshwater and saltwater	82	Perforated	miliolite, terracotta	-	-	-	-	-	Ruikar 2013
Muncy	Pennsylvania, USA	uncertain	freshwater	hundreds	Mainly side-notched	greywacke (sandstone)	-	170-283	76-127	-	-	Rau 1873
unknown (near Mariental)	Namibia	uncertain	freshwater	35	Mainly atypical, side- notched	shale	flaking	-	92	54	15	Sandelowsky 1971
Servia	Greece	Middle Neolithic (5,800- 5,300 BC)	freshwater	97	Side-notched	various carbonate rocks	-	85-115	80	70	20	Carrington Smith 2000

**Appendix 5.** Examples of archaeological sites with the occurrence of notched and grooved pebbles worldwide.

Site	Location	Period	Freshwater/ saltwater	Number of notched pebbles	Side-notched, end- notched, both- notched, atypical	Raw material	Manufacturing technique	Weight (avg) in grams	Length (avg of max) in mm	Width (avg of max) in mm	Thickness (avg of max) in mm	Publication
Sites (7) on Spokane Arm of Lake Roosevelt	Washington, USA	5,000- 3,000 BP	freshwater	154	Side-notched	quartzite, basalt	-	-	74.5	54.0	16.1	Casserino 2017
Sites (21) along the Clearwater River Region	Idaho, USA	10,800- 9,800 BP	freshwater	102	Mainly end-notched	mainly basalt	flaking (mostly direct percussion)	14-12,691	68.0	-	-	Hannold 2019
Sites along Lower Snake River Region	Idaho, USA	8,000- 7,000 BP	freshwater	216	Mainly end-notched	mainly basalt	flaking (mostly direct percussion)	-	72.5	-	-	Hannold 2019
Sarnate	Latvia	Neolithic	freshwater	58 and 108	unworked and in birch- wrapping	-	-	20-40	-	-	-	Bērziņš 2006
Sarnate	Latvia	Neolithic	freshwater	6	unworked large stones tied in bast	-	-	353-2808	-	-	-	Bērziņš 2006
Sarnate	Latvia	Neolithic	freshwater	121	end-notched	-	-	167.3	-	-	-	Bērziņš 2006
Sarnate	Latvia	Neolithic	freshwater	21	side-notched	-	-	212-1282	-	-	-	Bērziņš 2006
Šventoji	Lithuania	Neolithic	-	-	unworked and in birch- wrapping, side-notched	-	-	-	-	-	-	Rimantienė 2005 in Bērziņš 2008
Cham-Eslen	Switzerland	Neolithic	freshwater	1205	mainly unworked pebbles with imprints of rope, ¼ side-notched	-	-	10-59	-	-	-	Huber and Rehak 2014
Osipov Gasia	Amur River, Russia	Neolithic (13 300-12 300 BP)	freshwater	-	grooved	basalt	pecking	-	-	-	-	Vasil'evskii et al. 1998

**Appendix 6.** Examples of archaeological sites with the occurrence of notched and grooved pebbles worldwide.

Site	Location	Period	Freshwater/saltwater	Number of notched pebbles	Side-notched, end-notched, both-notched, atypical	Raw material	Manufacturing technique	Weight (avg) in grams	Length (avg of max) in mm	Width (avg of max) in mm	Thickness (avg of max) in mm	Publication
Cazarès	Haute-Garonne, France	Neolithic	freshwater	280	side-notched	quartzite, sandstone, schist	flaking	-	-	-	-	Nougier 1951
Banks of river Tam	Moyenne Garonne, France	-	freshwater	-	side-notched	quartz, schist,	flaking	-	-	-	-	Nougier 1951
Shores of lakes Neuchâtel and Biemme	Switzerland	Neolithic	freshwater	hundreds	side-notched	-	flaking	-	-	-	-	Nougier 1951
Sites in Western Norway	Norway	Late Mesolithic (6000-4000 cal BC)	saltwater	-	(probably mostly line sinkers, larger could be net sinkers)	soapstone	-	small (1-10), medium (10-50), large (>50).	-	-	-	Bergsvik and Ritchie 2018
Koksharovsko-Yuryinskaya 1 site	Trans-Urals, Russia	Mesolithic	freshwater	7	notched	-	-	-	110-140 (also smaller)	90-110 (also smaller)	-	Zhilin and Savchenko 2020
Beregovaya 2	Trans-Urals, Russia	Mesolithic	freshwater	6	unworked pebbles with bast binding	-	-	200	95-120	65-90	-	Zhilin and Savchenko 2020
Sonari	Pakistan	Bronze Age	saltwater	15	side-notched	mainly limestone	bifacial flaking (direct percussion)	22-168	46-86	34-82	8-19	Biagi <i>et al.</i> 2020
SWY-1	Coast of the Arabian sea	Neolithic	saltwater	69 (include grooved weights)	side-notched	calcite and limestone	-	-	-	-	-	Marrast, Béarez, and Charpentier 2019, 12
KHB-1	between the coast of the Indian Ocean and an inland lagoon	Middle Holocene (5-4th mil. BC)	saltwater	c. 400 (include line weights)	mainly end-notched	mainly limestone	-	-	-	-	-	Cavulli and Scaruffi 2011

**Appendix 7.** Examples of archaeological sites with the occurrence of notched and grooved pebbles worldwide.

1



2



3



Appendix 8. Notched pebbles.



1



2



3



Appendix 9. Notched pebbles.

1



2



3



Appendix 10. Notched pebbles.

1



2



3



Appendix 11. Notched pebbles.

1



2

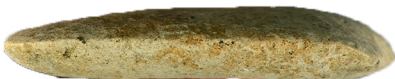


Appendix 12. Axes/adzes.

1



2



Appendix 13. Axes/adzes.

1



2

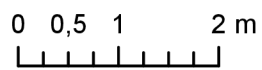
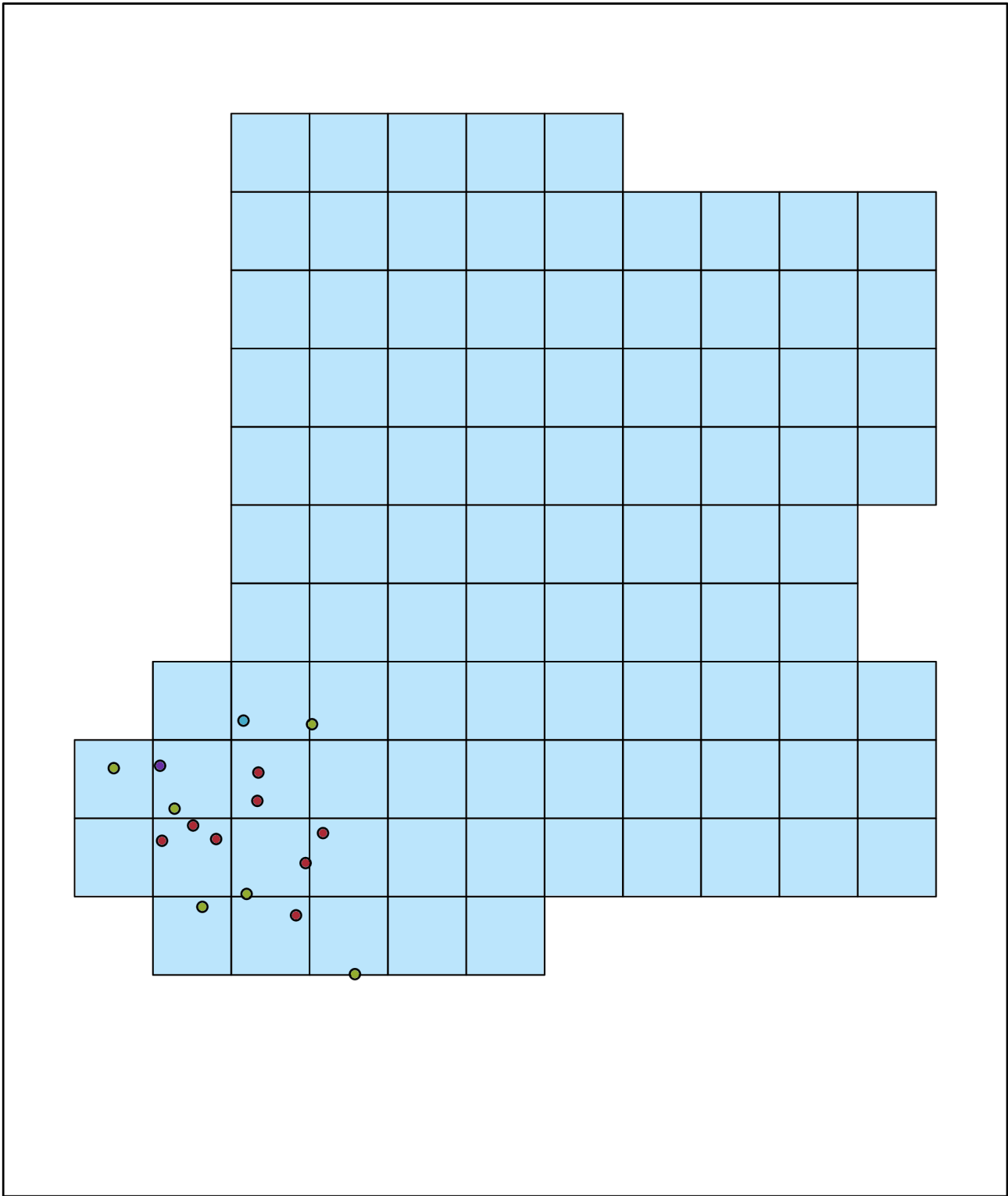


Appendix 14. Axes/adzes.

	N106	O106	P106	Q106	R106					
	N105	O105	P105	Q105	R105	S105	T105	U105	V105	
	N104	O104	P104	Q104	R104	S104	T104	U104	V104	
	N103	O103	P103	Q103	R103	S103	T103	U103	V103	
	N102	O102	P102	Q102	R102	S102	T102	U102	V102	
	N101	O101	P101	Q101	R101	S101	T101	U101		
	N100	O100	P100	Q100	R100	S100	T100	U100		
	M99	N99	O99	P99	Q99	R99	S99	T99	U99	V99
L98	M98	N98	O98	P98	Q98	R98	S98	T98	U98	V98
L97	M97	N97	O97	P97	Q97	R97	S97	T97	U97	V97
	M96	N96	O96	P96	Q96					



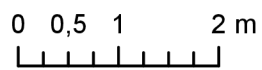
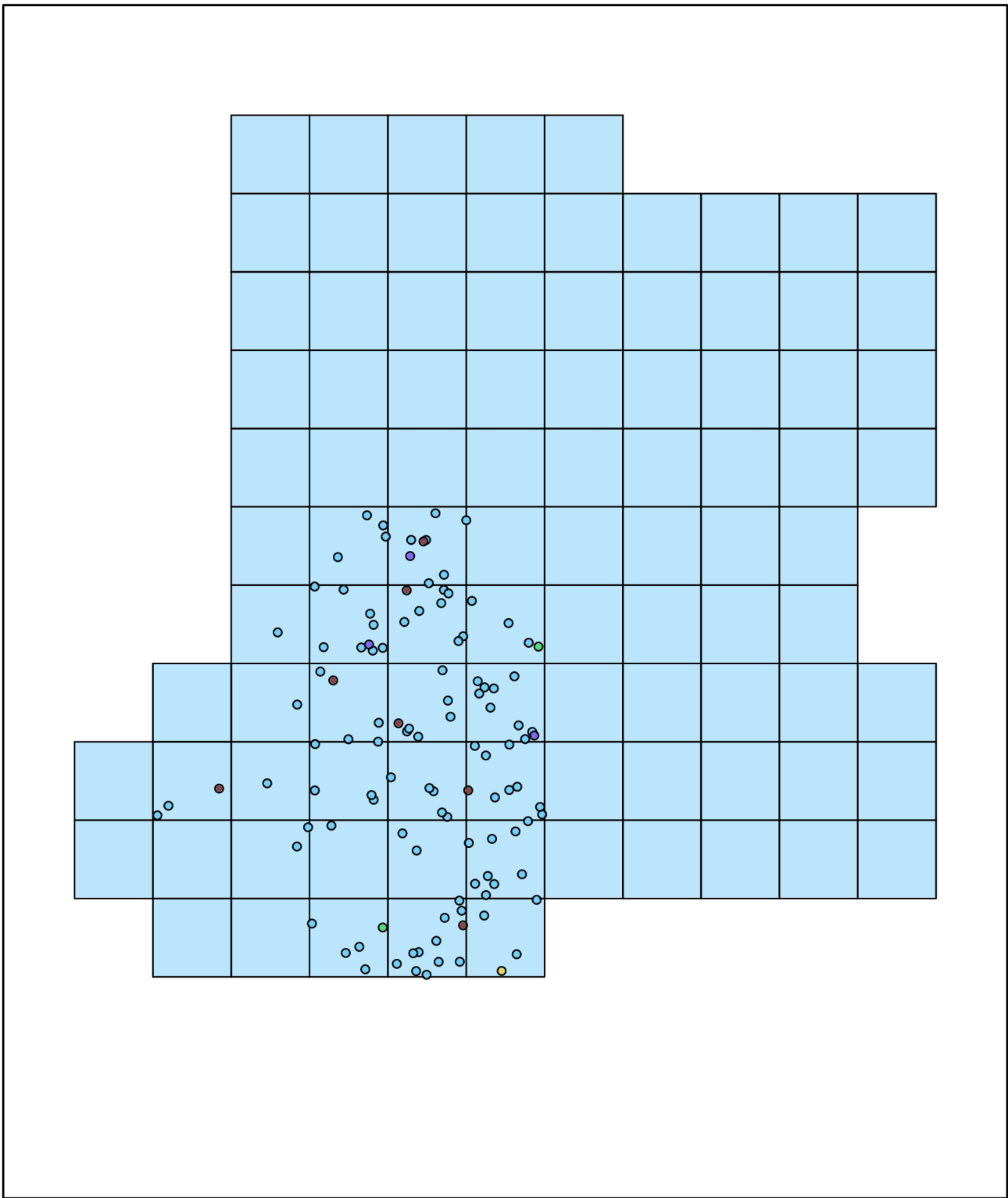
0 0,5 1 2 m



Typology	
<span style="color: green;">●</span>	notched pebble
<span style="color: purple;">●</span>	hammer/maul
<span style="color: red;">●</span>	unworked pebble
<span style="color: lightblue;">●</span>	backed knife

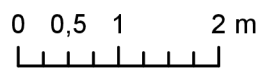
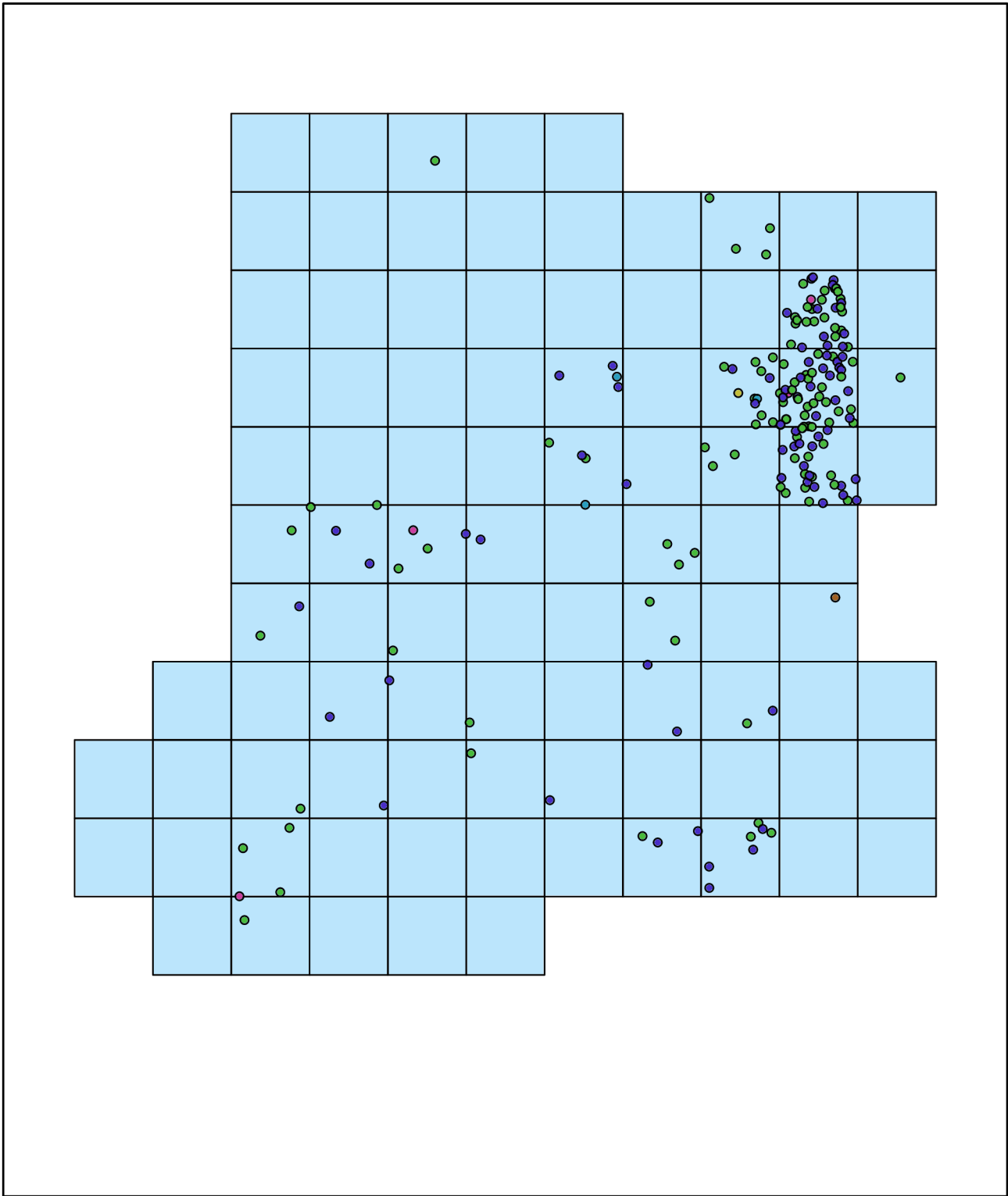
Appendix 16. Occurrence of analysed limestone pebbles in the layer 5.





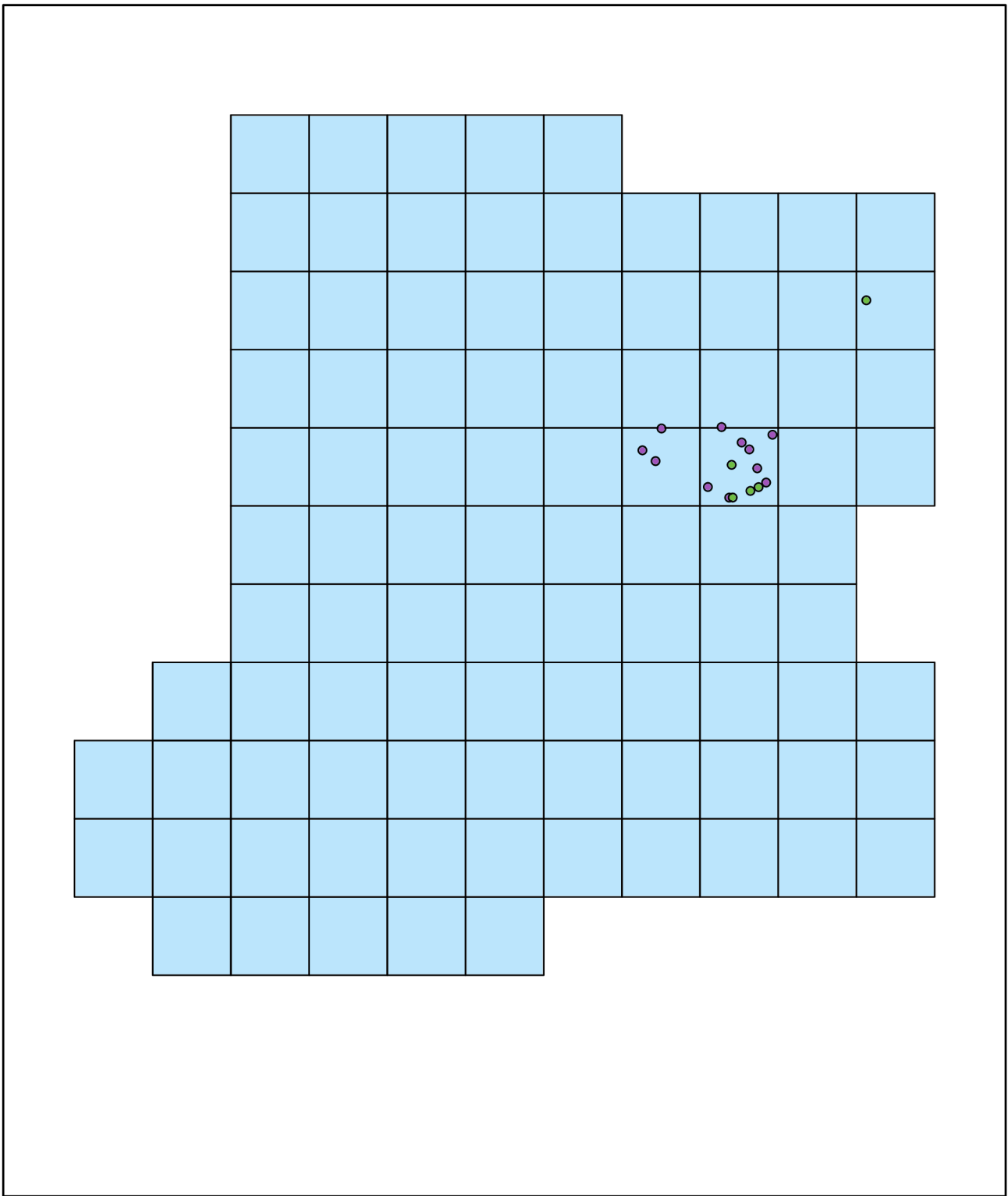
Typology	
<span style="color: red;">●</span>	notched pebble
<span style="color: green;">●</span>	pick
<span style="color: purple;">●</span>	hammer/maul
<span style="color: lightblue;">●</span>	unworked pebble
<span style="color: yellow;">●</span>	backed knife

Appendix 17. Occurrence of analysed limestone pebbles in the layer 4.



Typology	
<span style="color: green;">●</span>	notched pebble
<span style="color: pink;">●</span>	axe/adze
<span style="color: cyan;">●</span>	pick
<span style="color: brown;">●</span>	hammer/maul
<span style="color: blue;">●</span>	unworked pebble
<span style="color: yellow;">●</span>	large stone with natural holes

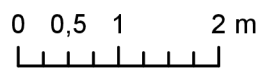
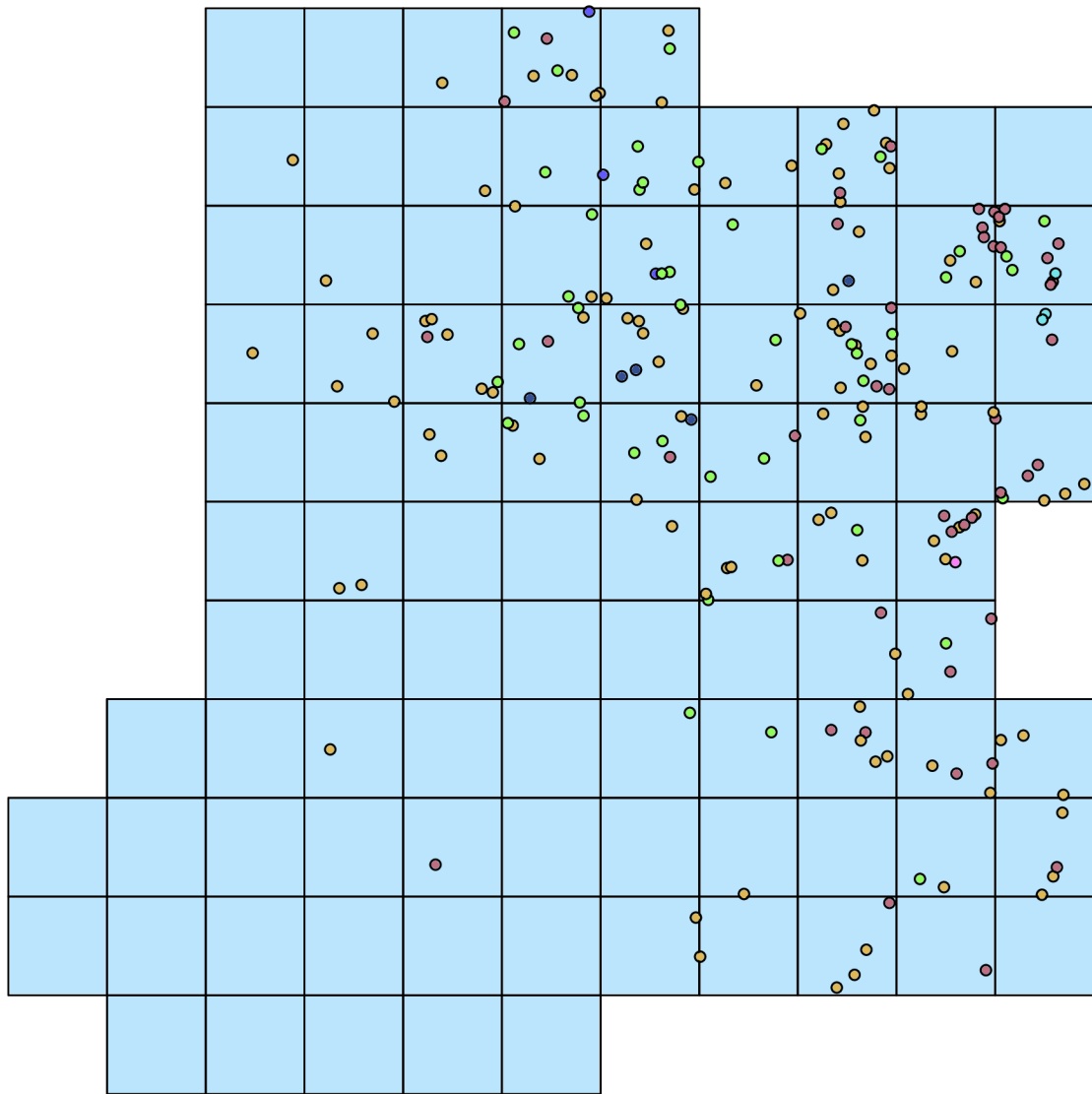
Appendix 18. Occurrence of analysed limestone pebbles in the layer 3c.



0 0,5 1 2 m

Typology	
●	notched pebble
●	unworked pebble

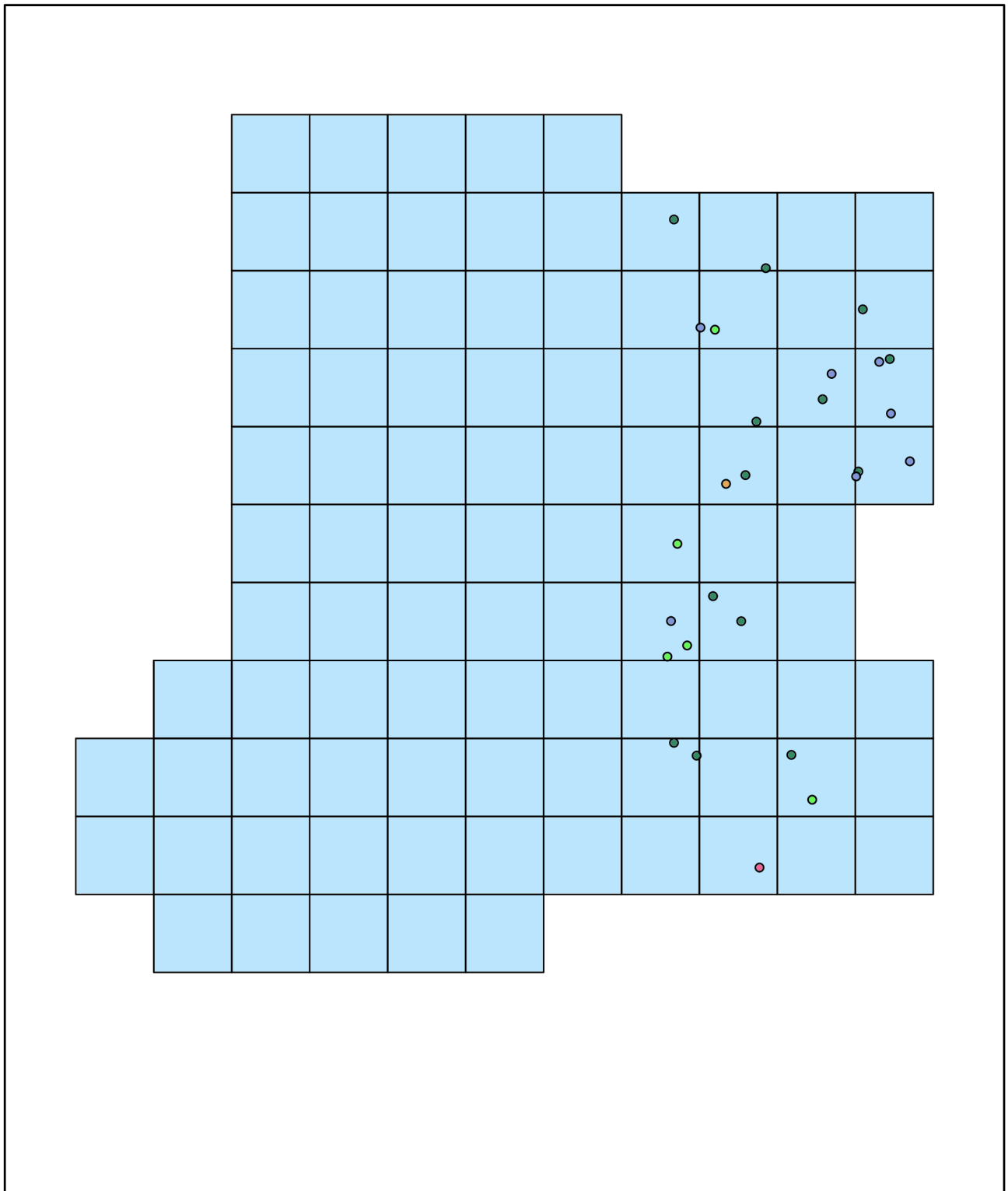
Appendix 19. Occurrence of analysed limestone pebbles in the layer 3b.



**Typology**

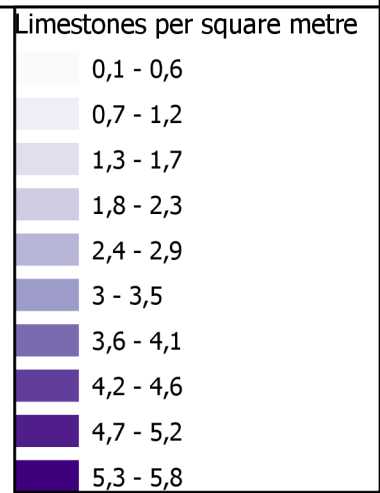
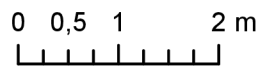
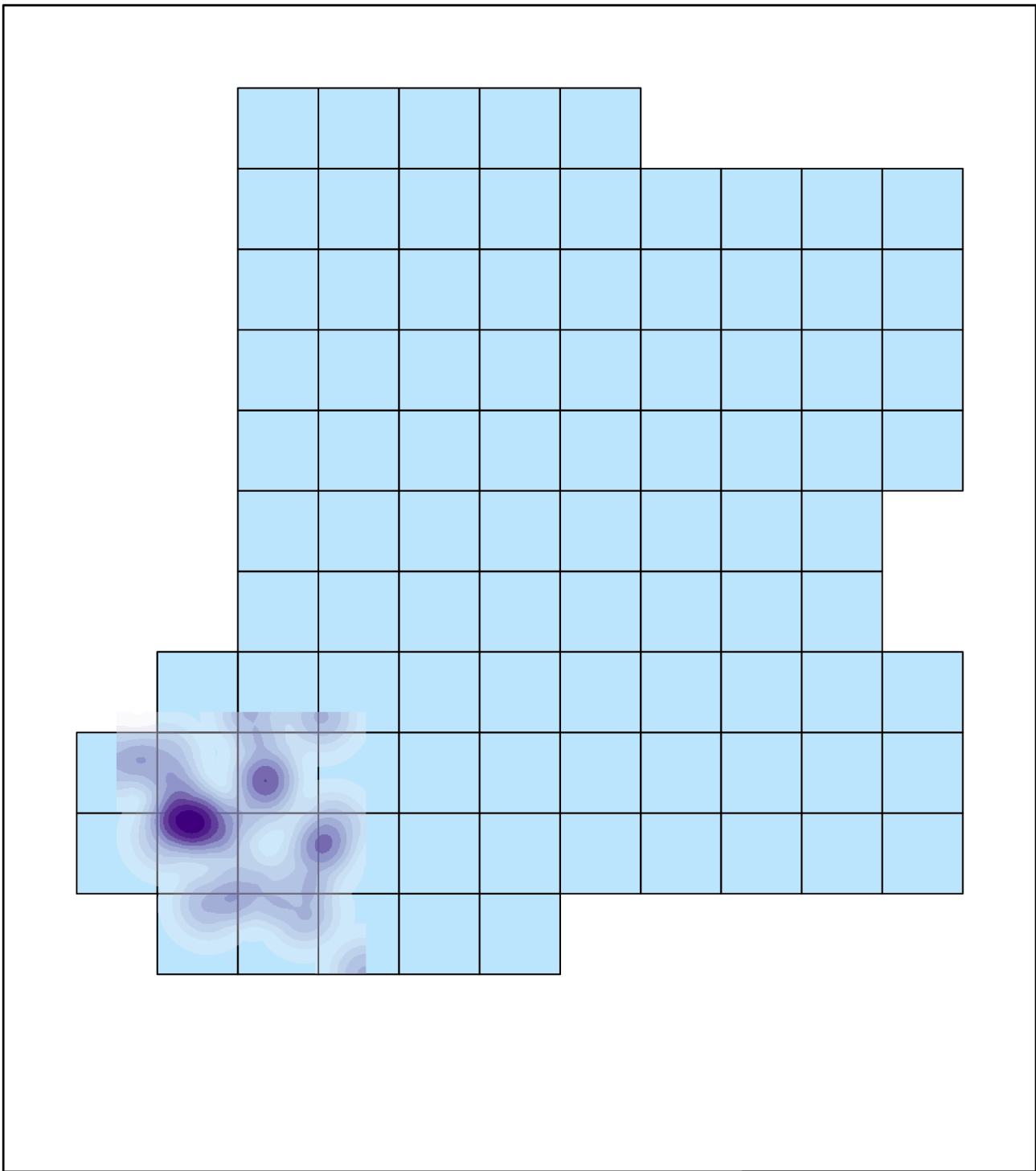
- notched pebble
- axe/adze
- pick
- hammer/maul
- unworked pebble
- backed knife
- large stone with natural holes

Appendix 20. Occurrence of analysed limestone pebbles in the layer 3a.

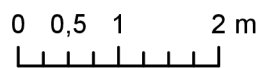
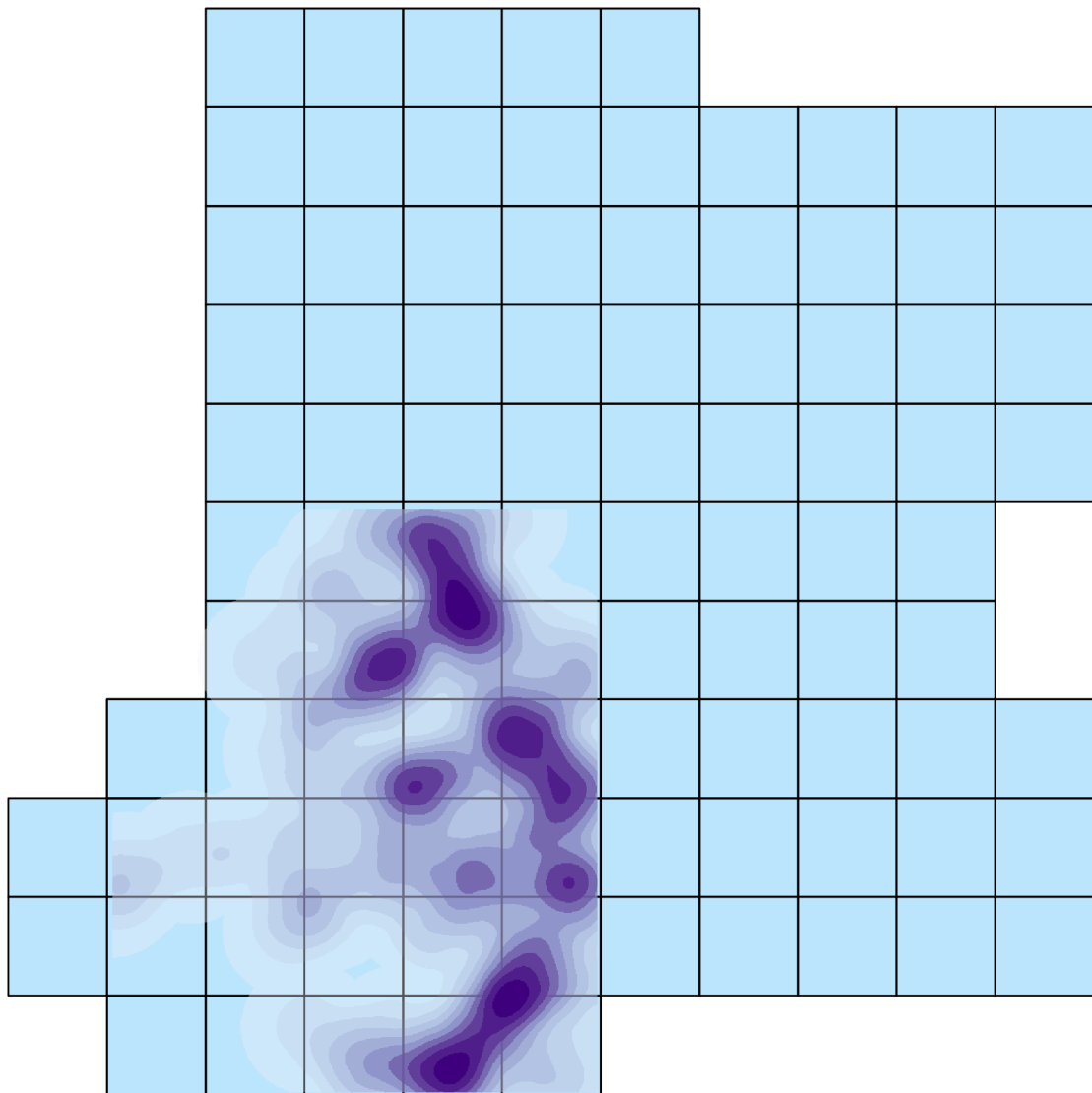


Typology	
<span style="color: blue;">●</span>	notched pebble
<span style="color: green;">●</span>	axe/adze
<span style="color: orange;">●</span>	pick
<span style="color: darkgreen;">●</span>	unworked pebble
<span style="color: red;">●</span>	backed knife

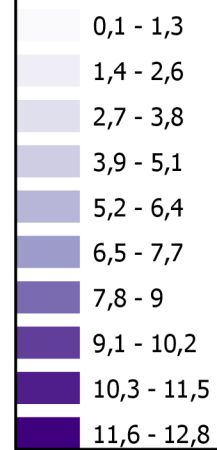
Appendix 21. Occurrence of analysed limestone pebbles in the layer 3-0.



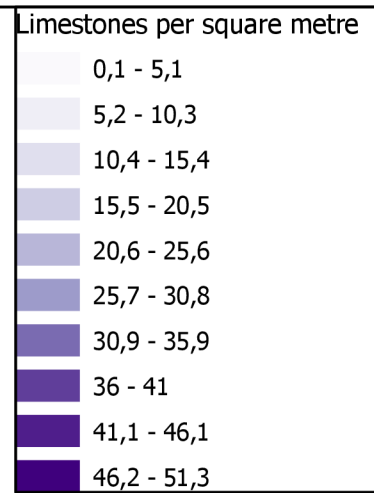
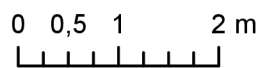
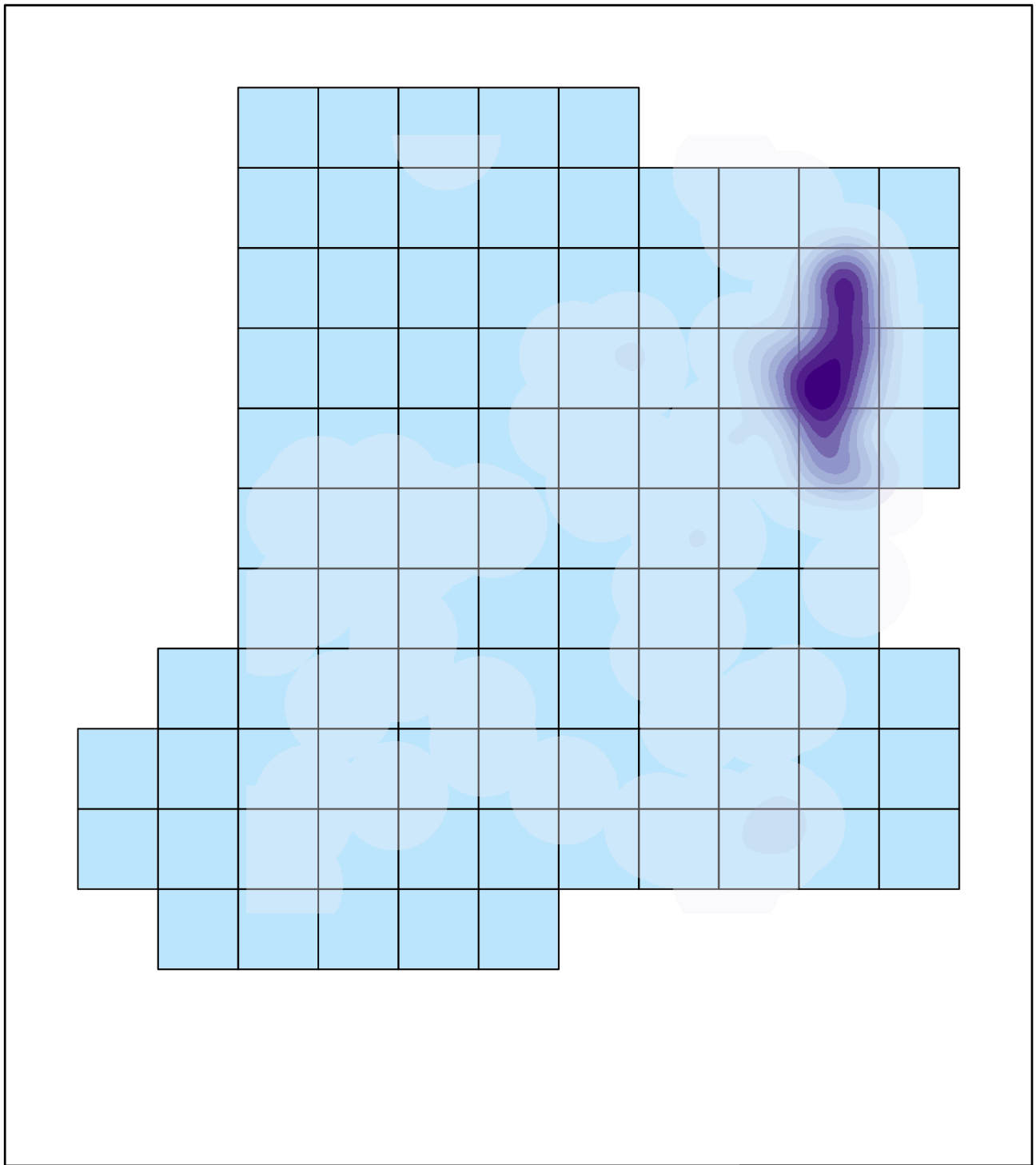
Appendix 22. Kernel Density: limestones in the layer 5.



Limestones per square metre

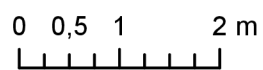
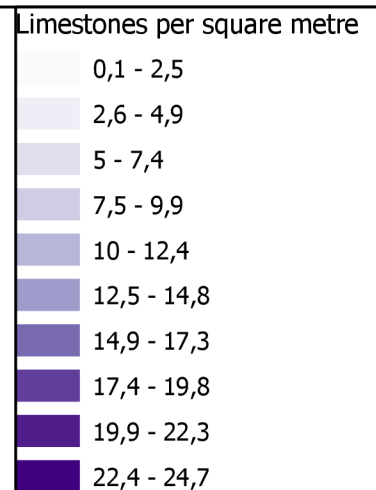
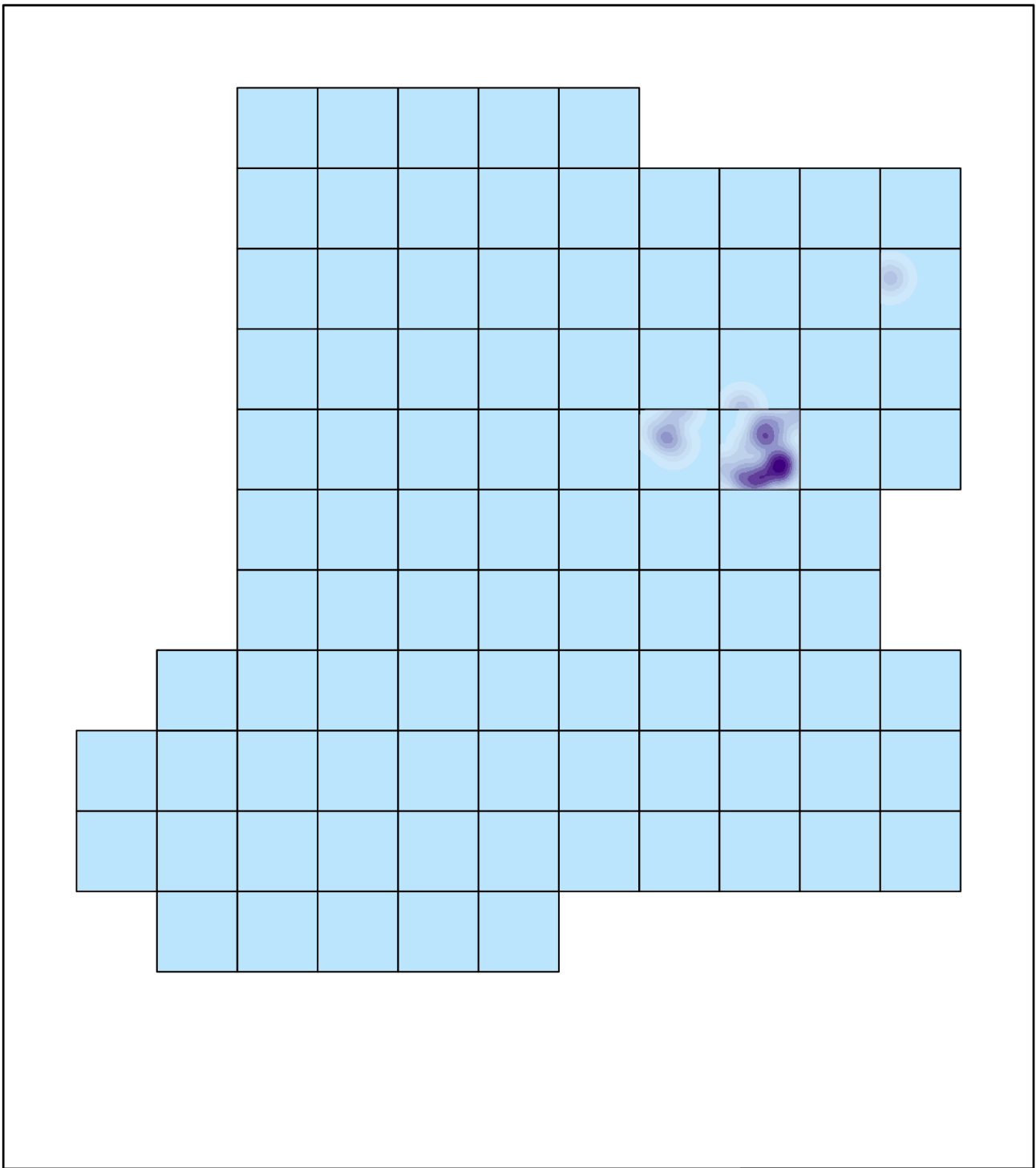


Appendix 23. Kernel Density: limestones in the layer 4.

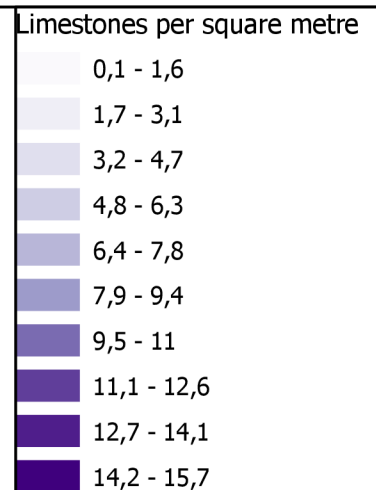
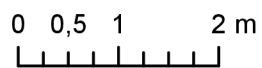
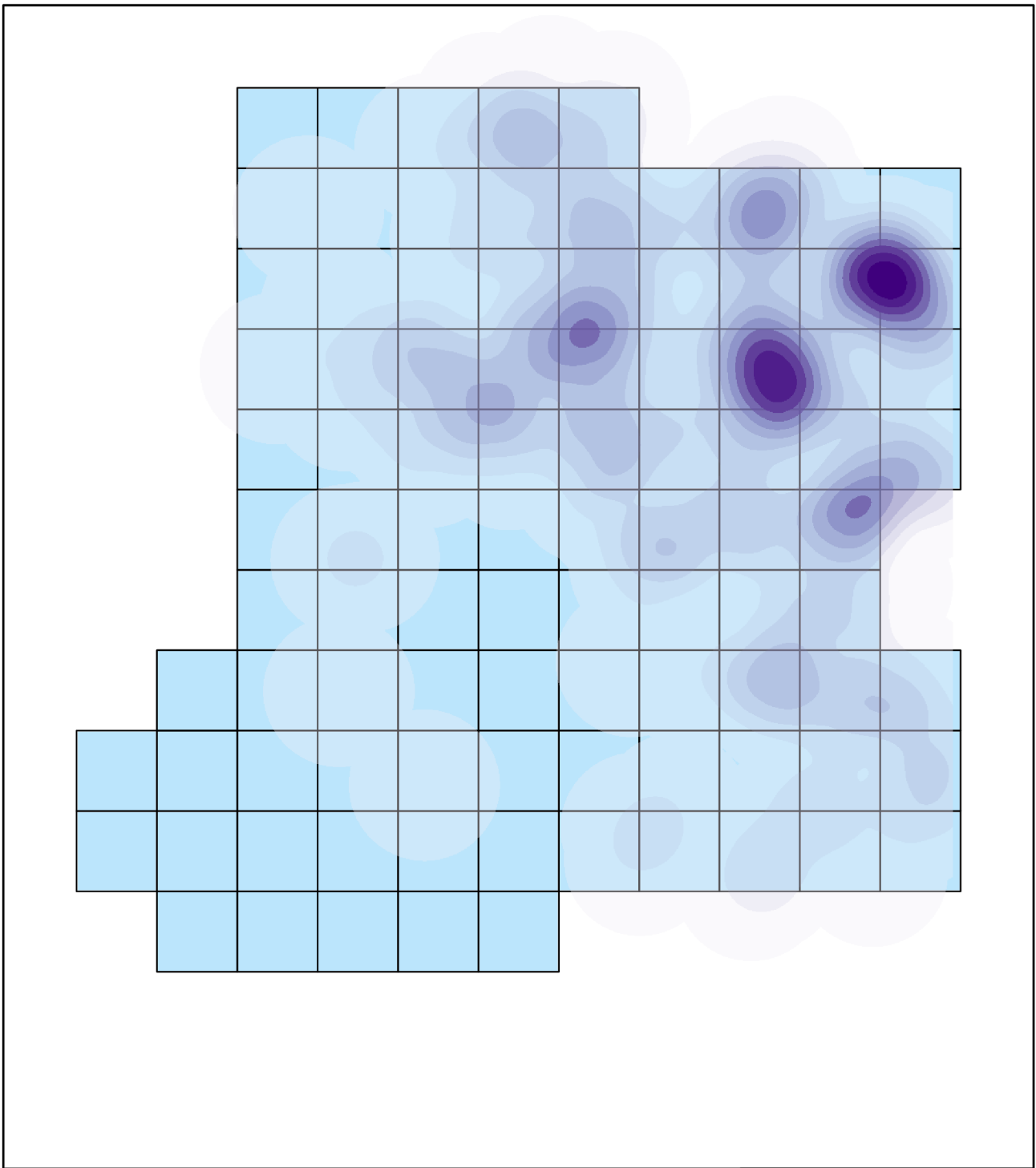


Appendix 24. Kernel Density: limestones in the layer 3c.

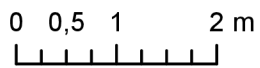
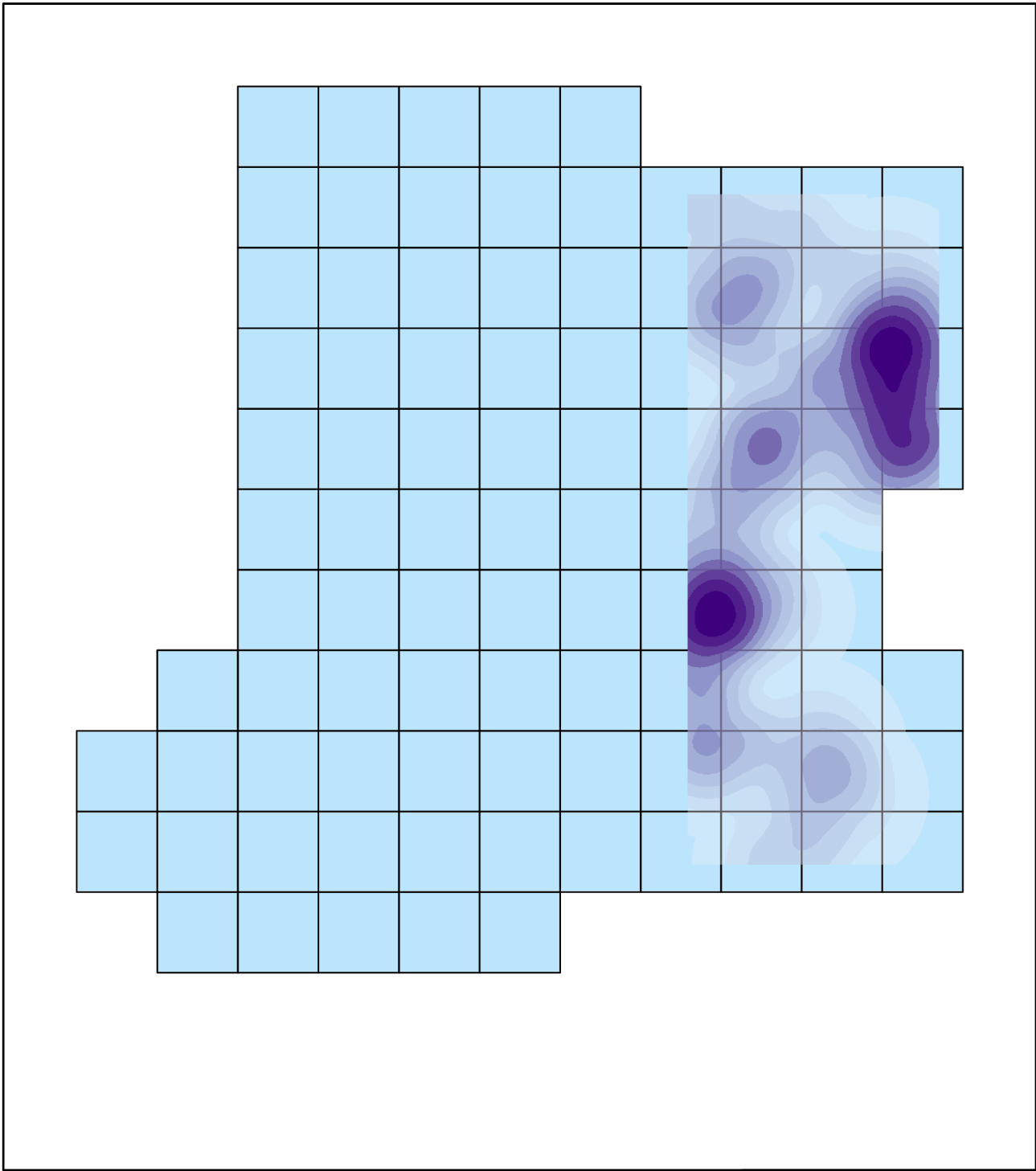




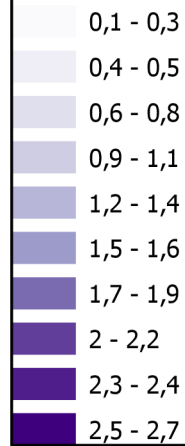
Appendix 25. Kernel Density: limestones in the layer 3b.



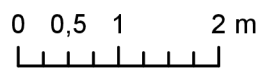
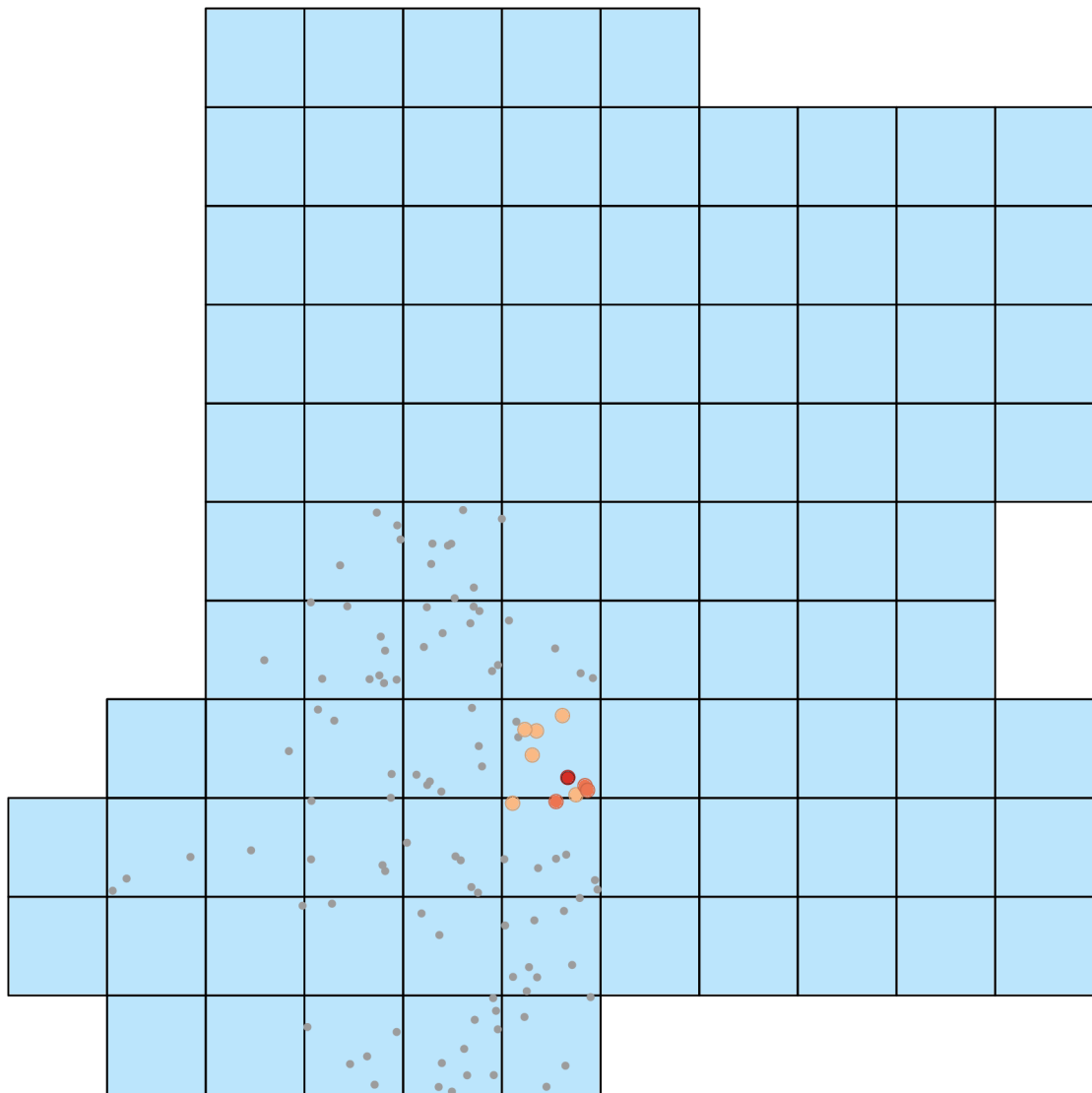
Appendix 26. Kernel Density: limestones in the layer 3a.



Limestones per square metre

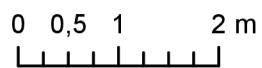
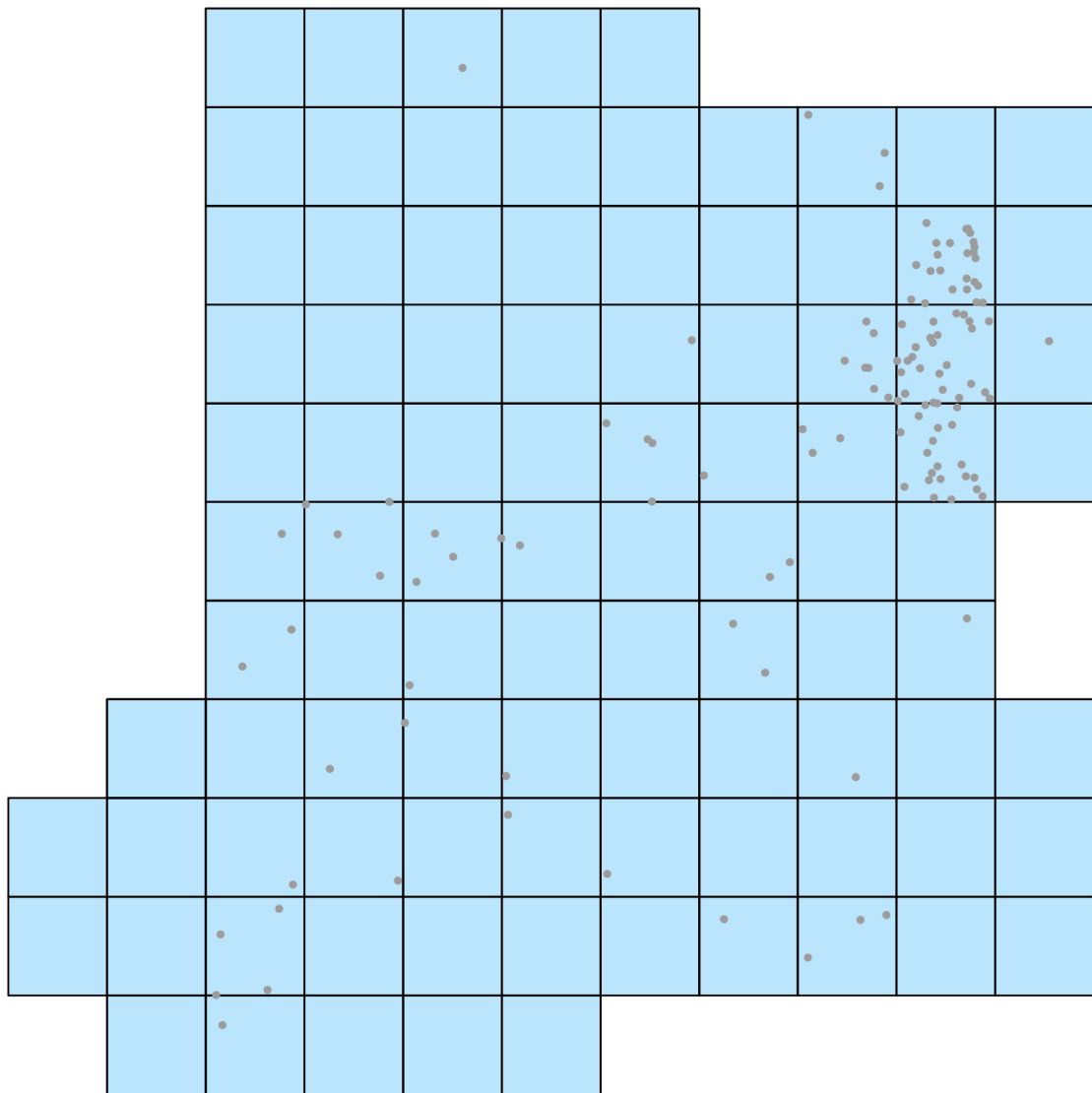


Appendix 27. Kernel Density: limestones in the layer 3-0.



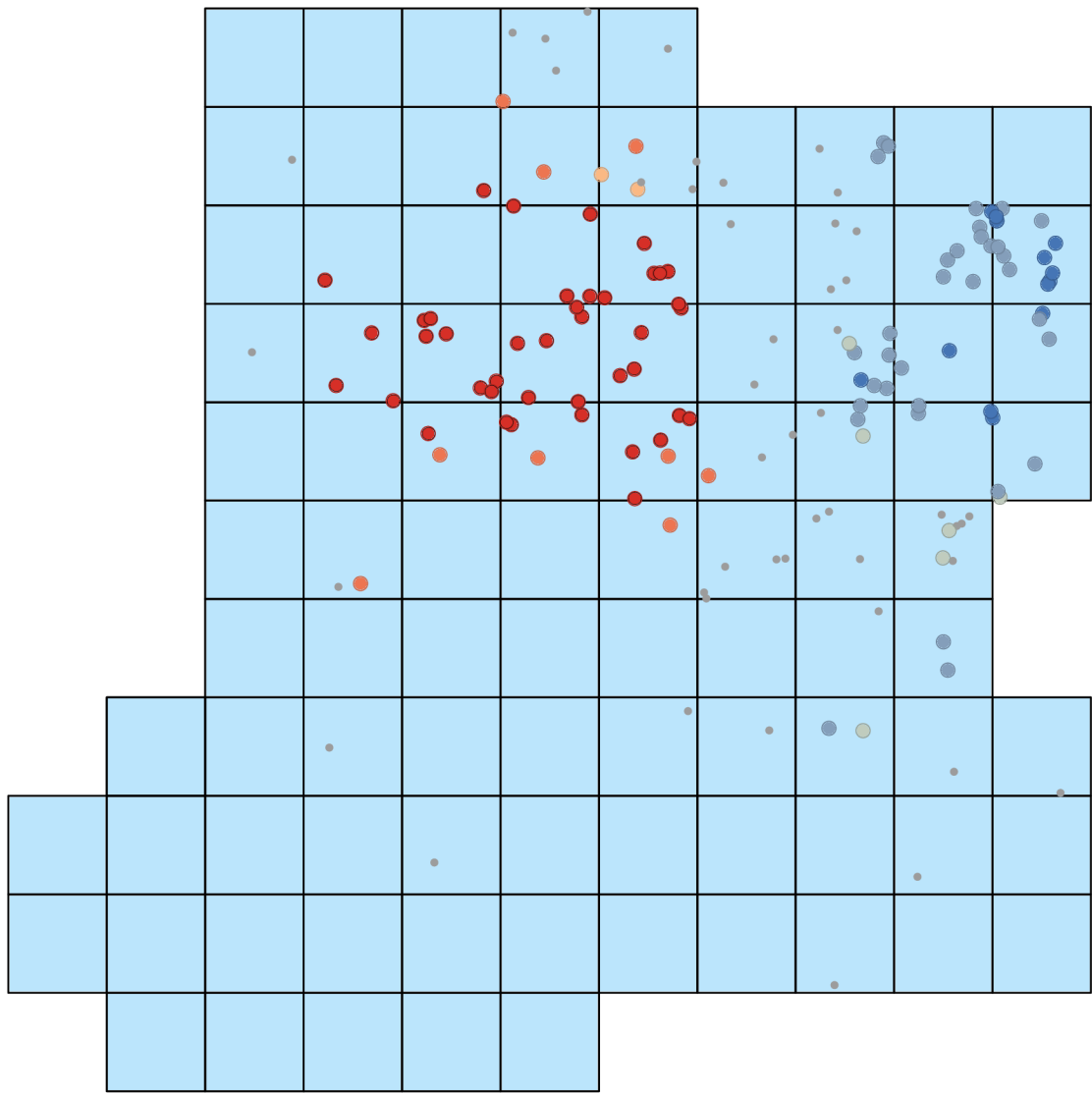
- Cold Spot with 99% Confidence
- Cold Spot with 95% Confidence
- Cold Spot with 90% Confidence
- Not Significant
- Hot Spot with 90% Confidence
- Hot Spot with 95% Confidence
- Hot Spot with 99% Confidence

Appendix 28. Optimized hot spot analysis based on weight in the layer 4.



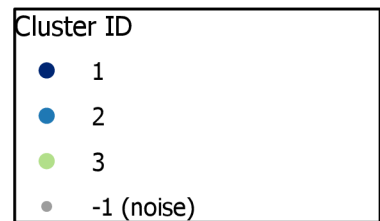
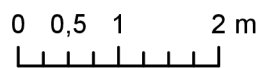
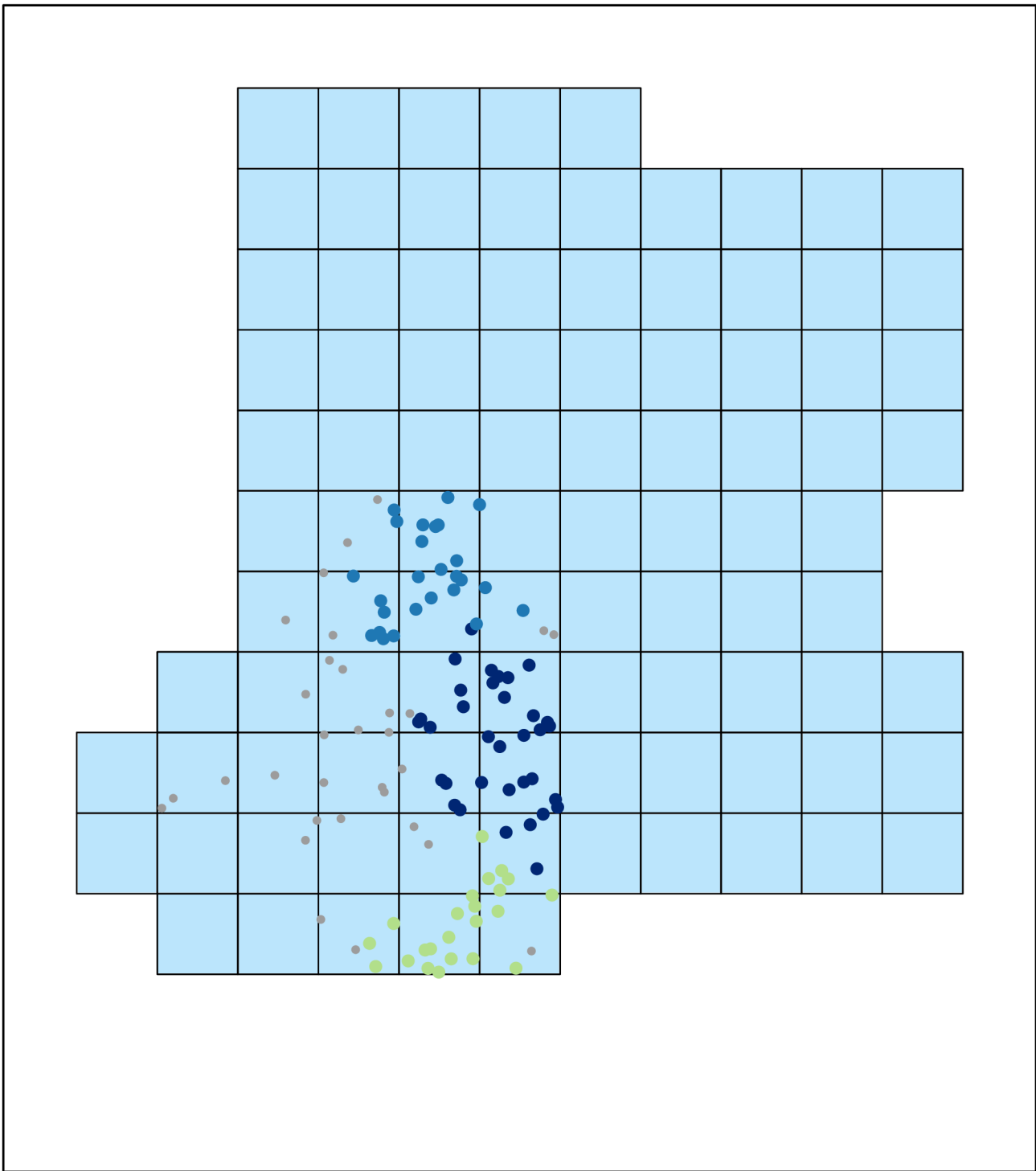
- Cold Spot with 99% Confidence
- Cold Spot with 95% Confidence
- Cold Spot with 90% Confidence
- Not Significant
- Hot Spot with 90% Confidence
- Hot Spot with 95% Confidence
- Hot Spot with 99% Confidence

Appendix 29. Optimized hot spot analysis based on length/width index in the layer 3c.

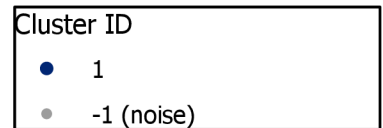
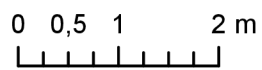
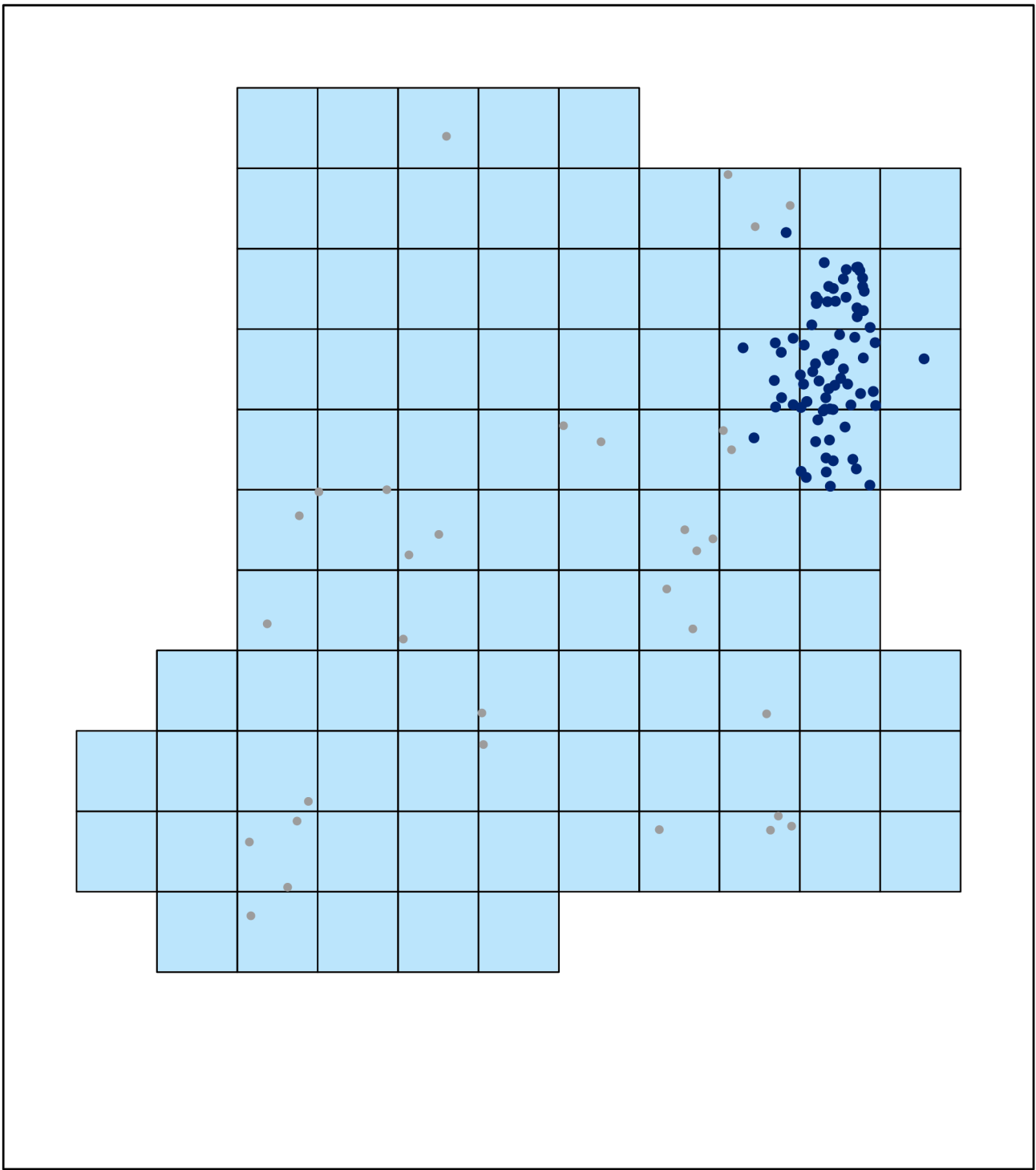


- Cold Spot with 99% Confidence
- Cold Spot with 95% Confidence
- Cold Spot with 90% Confidence
- Not Significant
- Hot Spot with 90% Confidence
- Hot Spot with 95% Confidence
- Hot Spot with 99% Confidence

Appendix 30. Optimized hot spot analysis based on length/width index in the layer 3a.

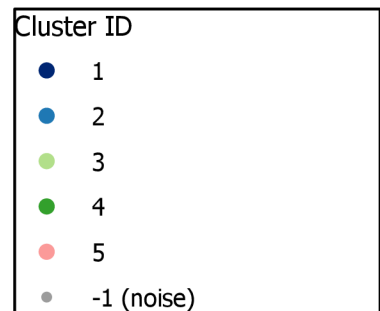
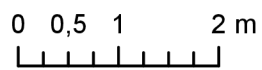
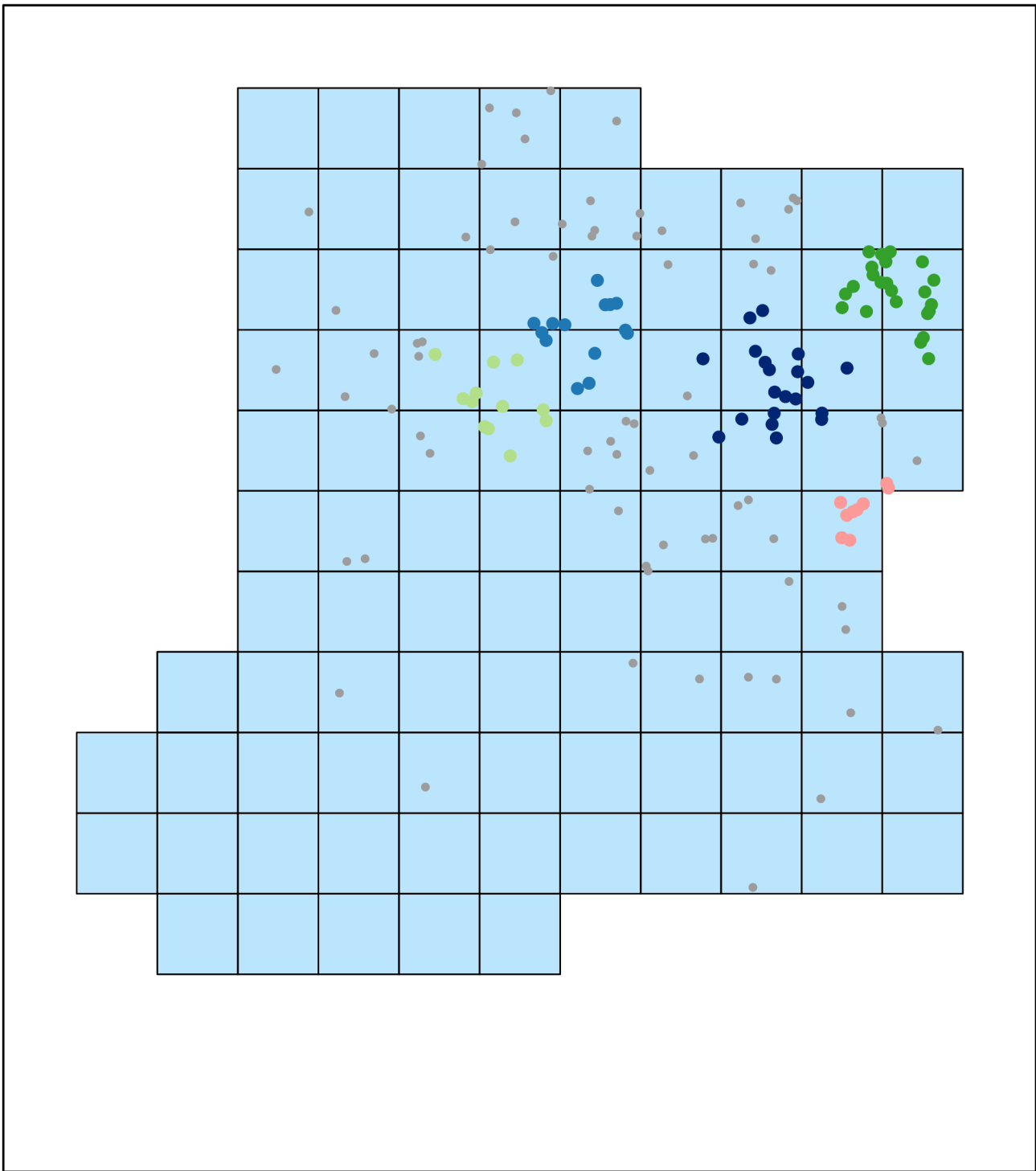


Appendix 31. Density-based clustering in the layer 4.



Appendix 32. Density-based clustering in the layer 3c.





Appendix 33. Density-based clustering in the layer 3a.