

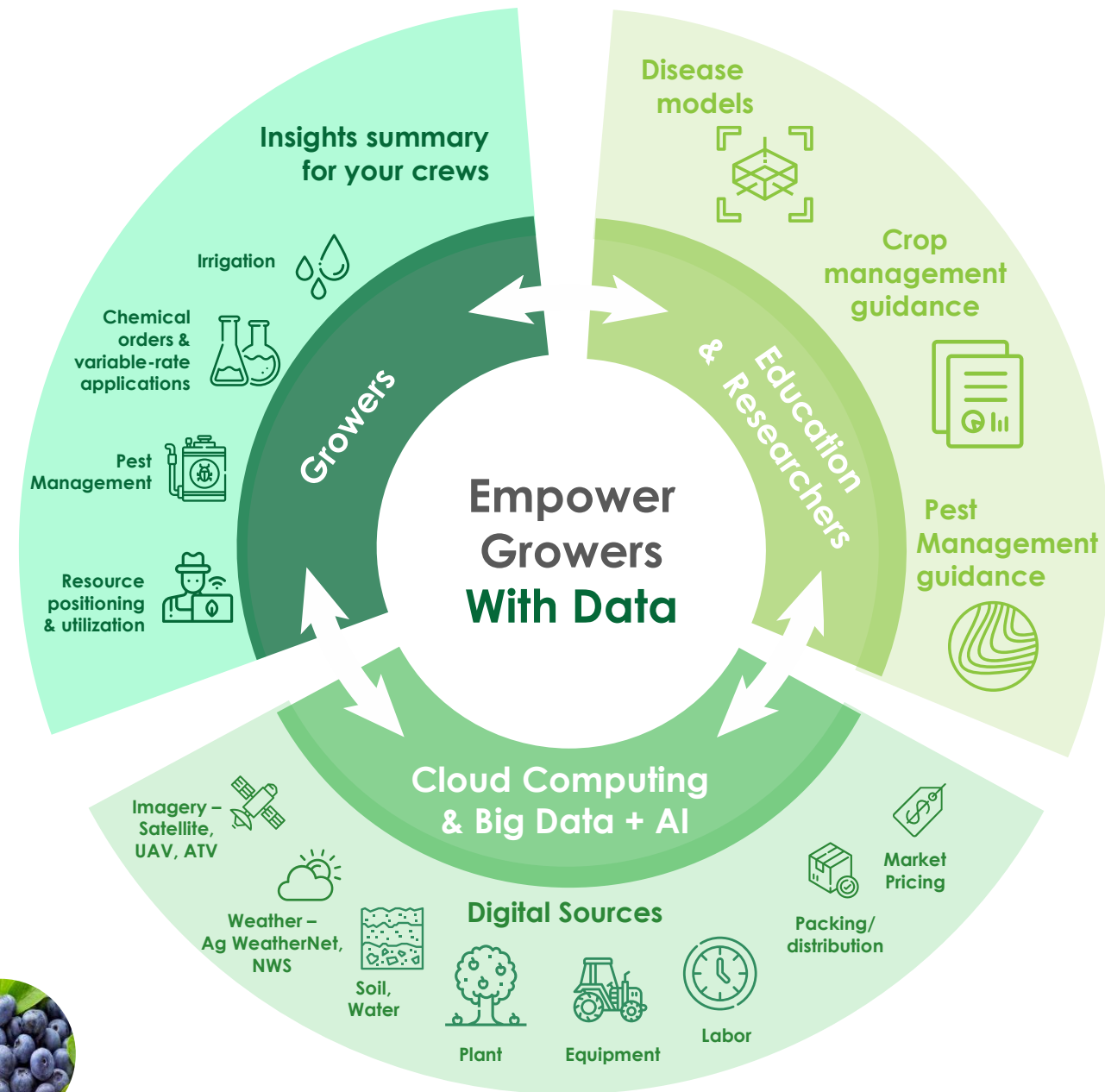


Columbia Reach
Chiawana Smart Orchard
661 SoilOptix Report

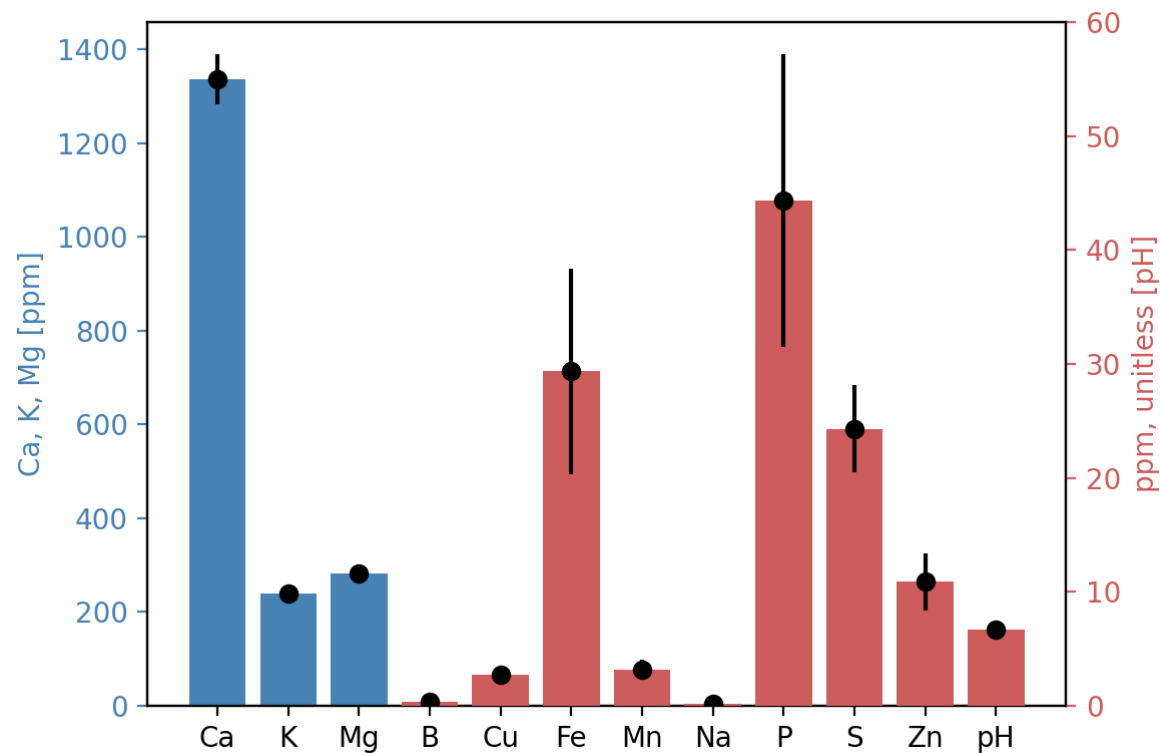


What's Inside

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- **Soil Maps**
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 - Macronutrients
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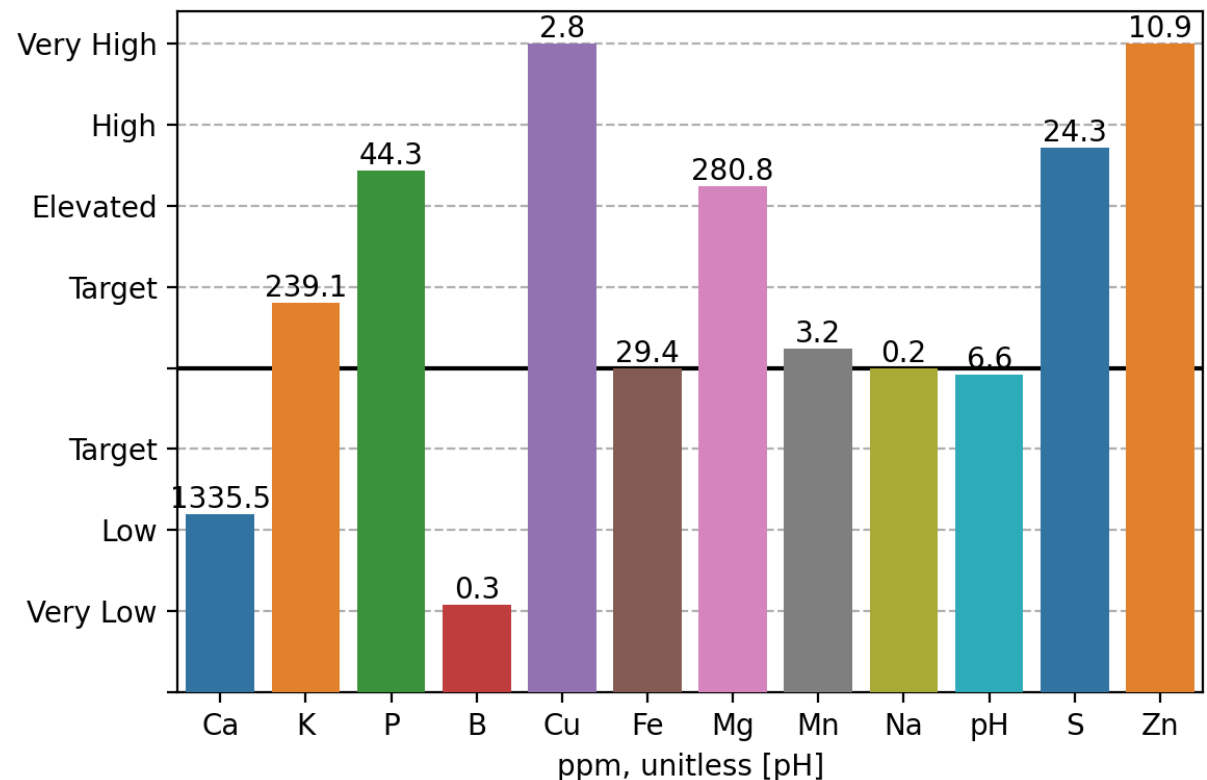


Departure From Optimal



The average value of each micro and macro nutrient. The blue bars are plotted on the left axis and the red bars are plotted on the right axis.

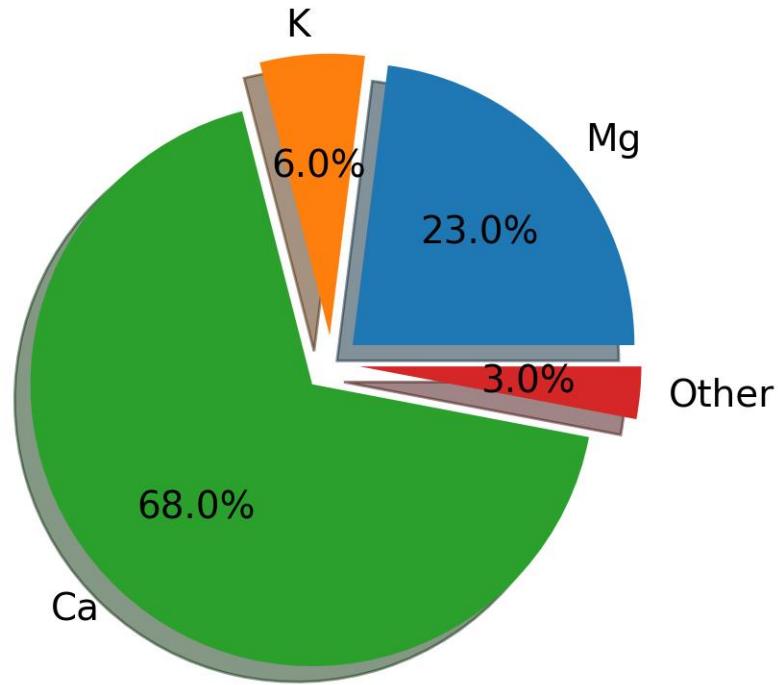
The black error bars indicate +/- 1 standard deviation around the mean.



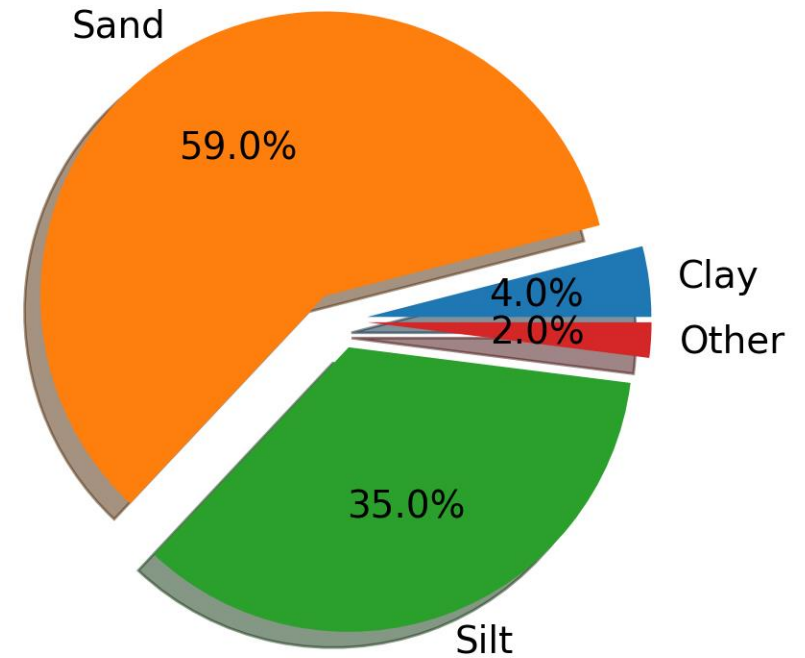
The average value of each nutrient relative to the defined optimal ranges. The black horizontal line indicates 100%. Target ranges are 125% and 75%.

*all variables in the top two bar plots are in ppm, except pH which is unitless.

Soil Properties



Breakdown of base saturation composition percentages as a pie chart. 'Other' is calculated as: $\text{Other} = 100 - (\text{K_bse} + \text{Mg_bse} + \text{Ca_bse})$



Breakdown of soil texture composition.



Soil Properties

Physical Properties

Variable	Mean	Min	Max	SD	CV	Units
CEC	10.01	8.68	11.39	0.54	5.39	meq/100g
Clay	4.34	2.32	6.43	0.82	18.89	%
Loam	40.01	35.97	43.92	1.58	3.95	%
OM	1.25	0.91	1.57	0.13	10.4	%
pH	6.63	5.81	7.49	0.36	5.43	unitless
Sand	59.99	56.08	64.03	1.58	2.63	%
Silt	35.67	29.55	41.6	2.39	6.7	%

Micronutrients

Variable	Mean	Min	Max	SD	CV	Units
B	0.34	0.17	0.47	0.04	11.76	ppm
Cu	2.75	1.52	3.88	0.31	11.27	ppm
Fe	29.35	14.31	53.01	9.04	30.8	ppm
Mn	3.19	1.65	5.85	0.85	26.65	ppm
Na	0.18	0.08	0.25	0.03	16.67	ppm
Zn	10.87	4.06	19.23	2.5	23	ppm

Complex Models

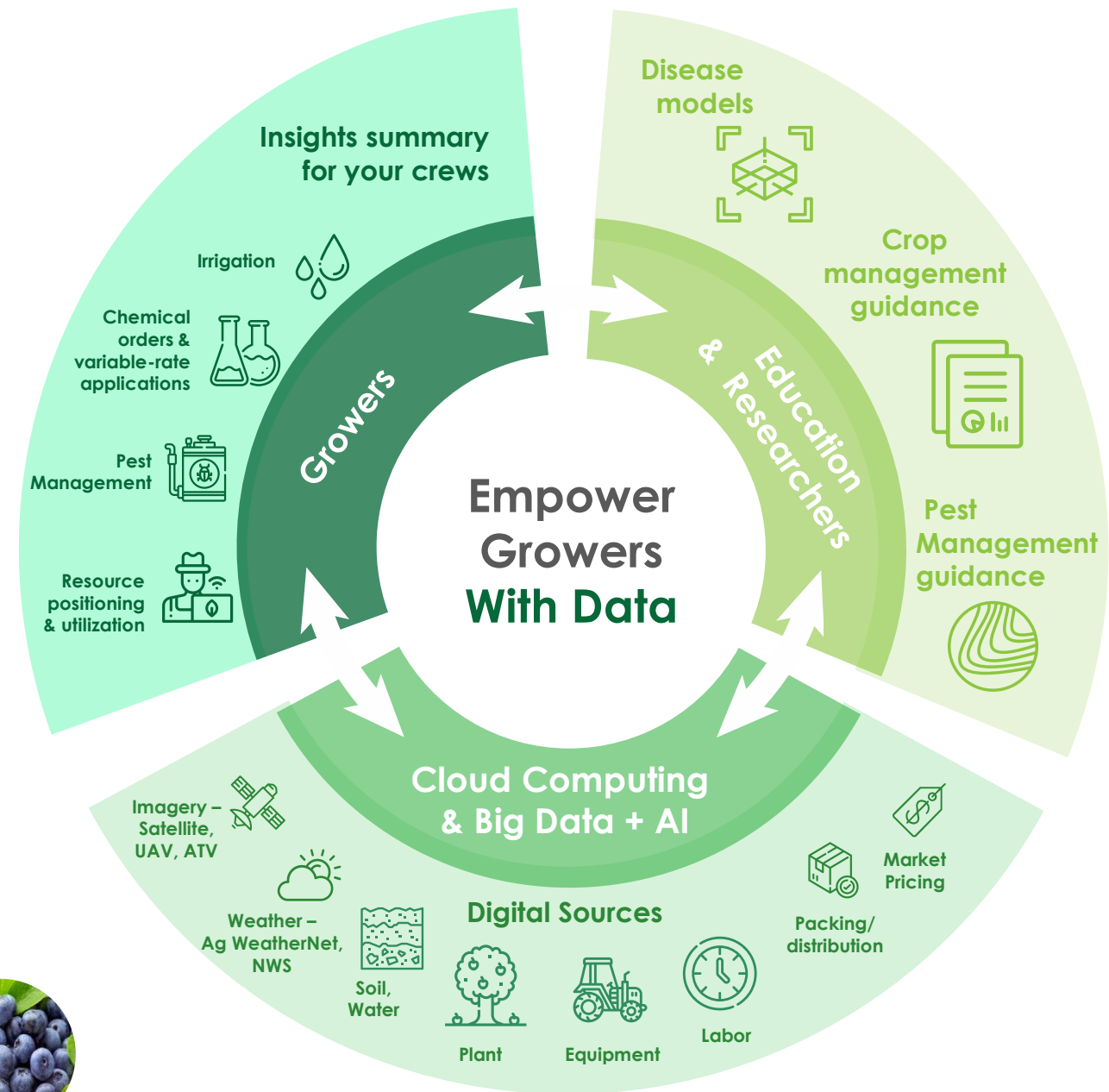
Variable	Mean	Min	Max	SD	CV	Units
Elevation	899.03	894.2	904.03	1.87	0.21	ft
Leak	8.08	7.03	9.16	0.42	5.2	unitless
PAWater	43.75	38.71	48.63	1.97	4.5	unitless
SALT	0.77	0.46	1.14	0.11	14.29	mmhos/cm

Macro Nutrients

Variable	Mean	Min	Max	SD	CV	Units
Ca	1335.46	1203.34	1472.1	53.32	3.99	ppm
Ca_bse	68.07	66.39	69.06	0.49	0.72	%
K	239.06	193.81	282.62	16.23	6.79	ppm
K_bse	6.24	5.55	6.96	0.26	4.17	%
Mg	280.8	236.57	311.04	12.46	4.44	ppm
Mg_bse	23.86	22.03	26.49	0.77	3.23	%
NH4N	1.67	0.5	2.9	0.36	21.56	lbs/acre
NO3N	1.26	1.15	1.4	0.04	3.17	lbs/acre
P	44.3	17.2	87.56	12.85	29.01	ppm
S	24.31	14.54	33.05	3.82	15.71	ppm

Ratios

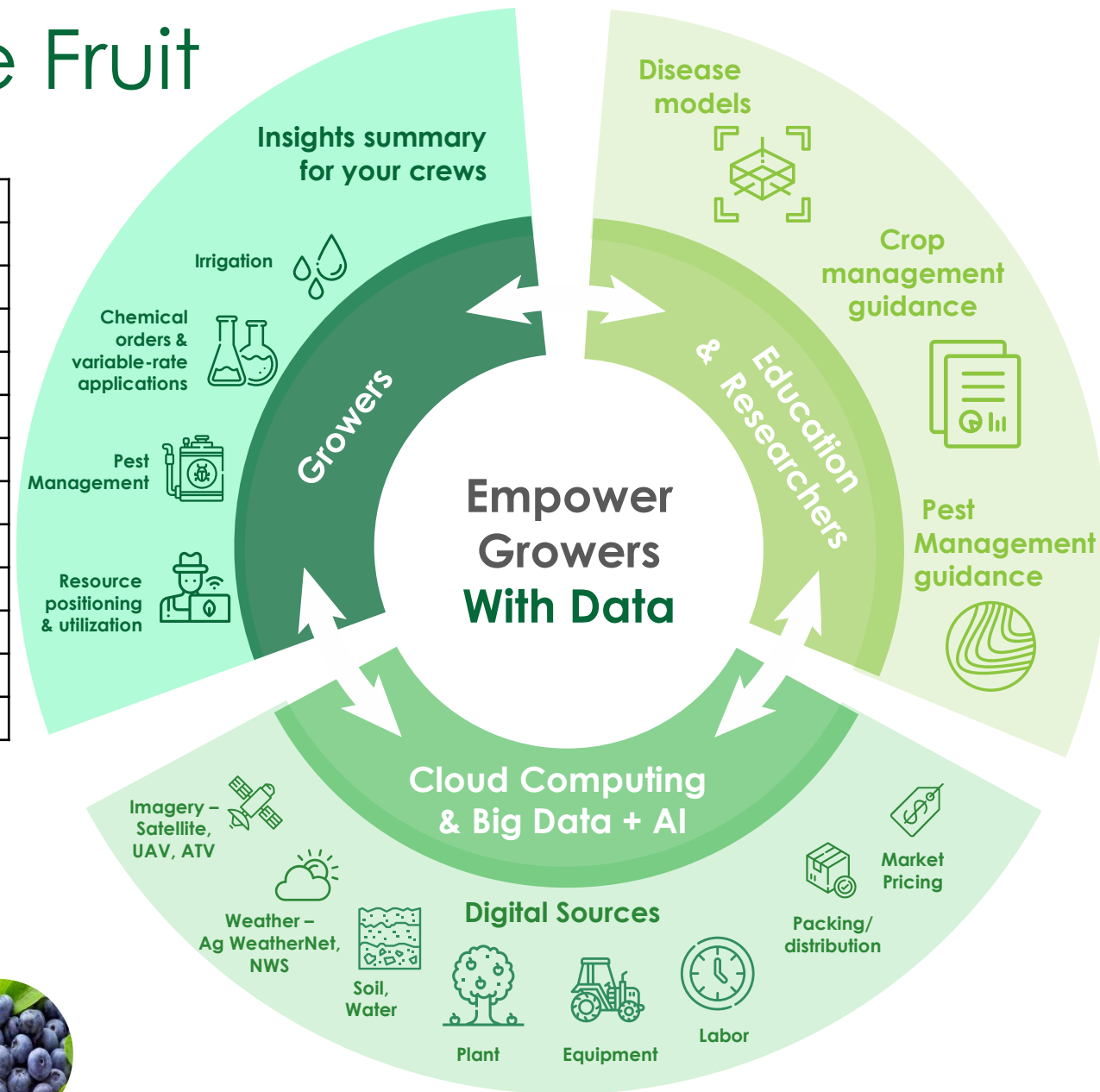
- Calcium-Magnesium
- Potassium-Magnesium
- Calcium-Potassium
- Calcium-Phosphorous
- Potassium-Boron
- Potassium-Magnesium
- Manganese-Copper
- Manganese-Zinc
- Phosphorous-Copper
- Phosphorous-Manganese
- Zinc-Copper



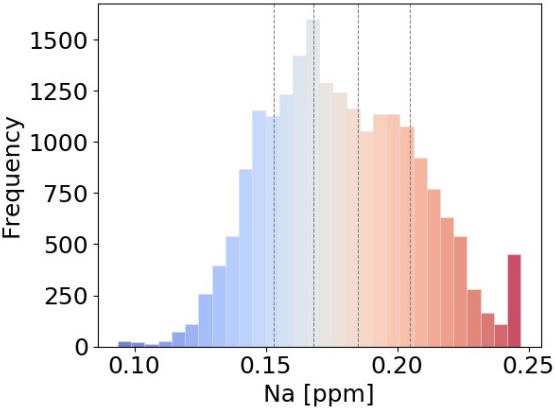
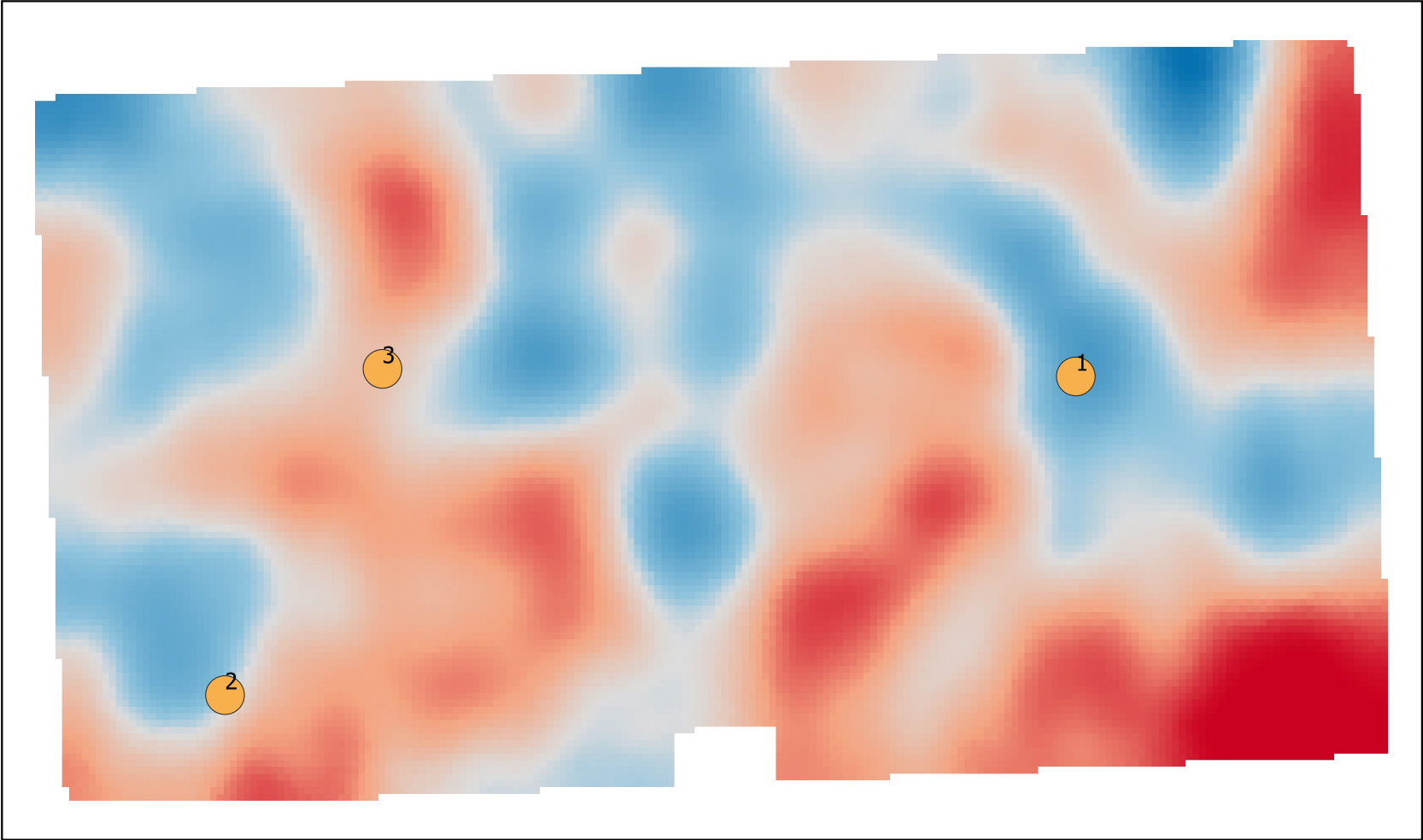
Optimal Values for Tree Fruit

Variable	unit	low	optimal	high	ppmoptimal
pH	unitless	<5	6-7.5	>8	
K	ppm	<120	150-250	>300	
Ca	meq/100g	<3	4.1-20		820-4000
Mg	meq/100g	<0.5	0.5-2.5	>2.5	60-300
Na	meq/100g		<0.5	>0.5	<115
B	ppm	<1	1-1.5	>1.5	
S	ppm	<4	9-20	>20	
Zn	ppm	<0.25	0.6-1		
Cu	ppm	<0.1	0.6-1	>20	
Mn	ppm		1-5	>50	
Fe	ppm		>4.5		
P	ppm	<10	15-40	>50	

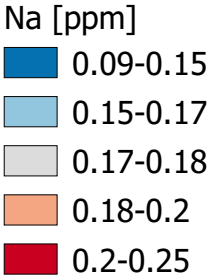
* Per Washington State University research



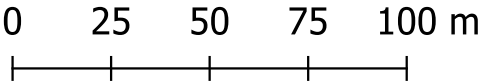
Chiawana:Na



Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	0.18	15

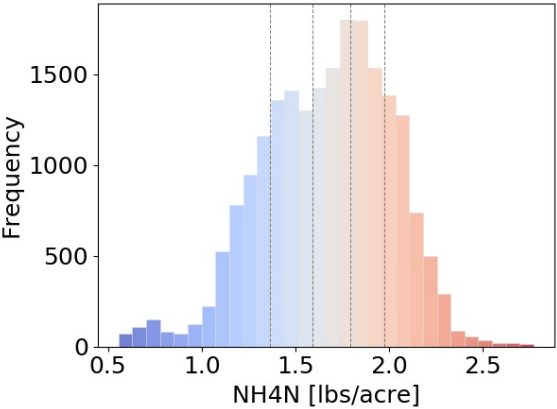
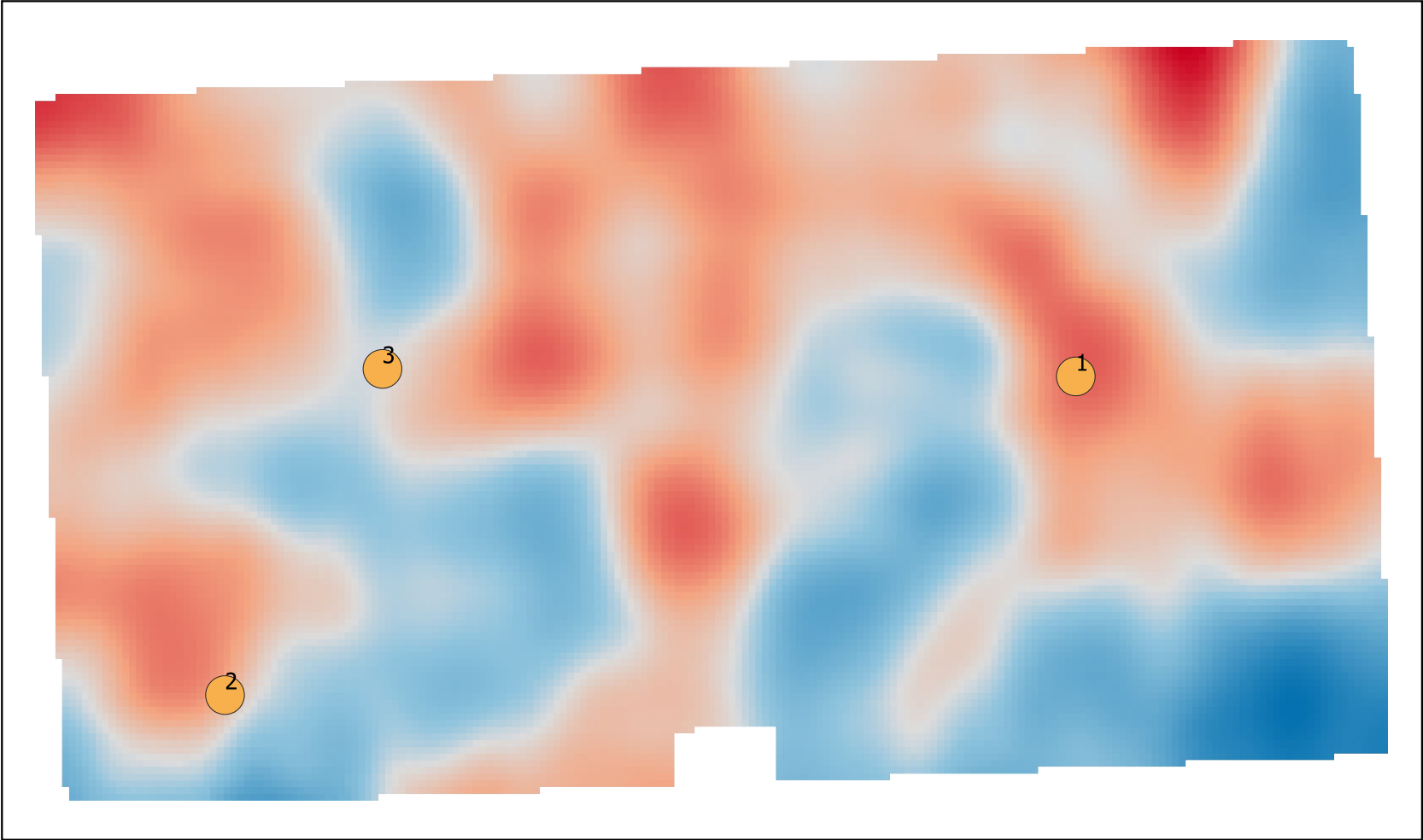


ID	Na
1	25.3
2	43.7
3	39.1



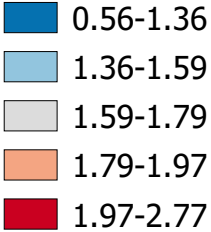
*This document is designed to provide you a “snapshot” of your field at a glance. Legend descriptions are not recommendations.

Chiawana:NH4N

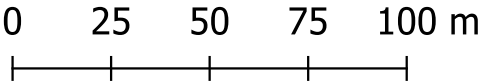


Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	1.67	20

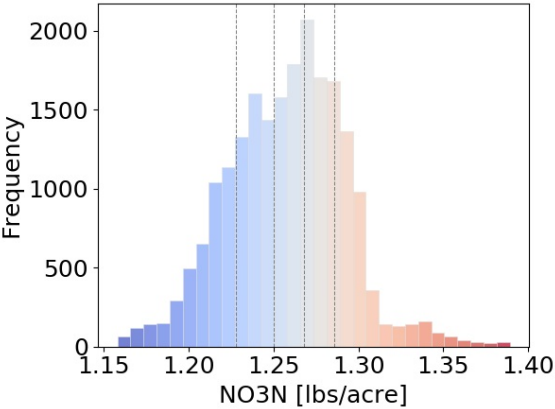
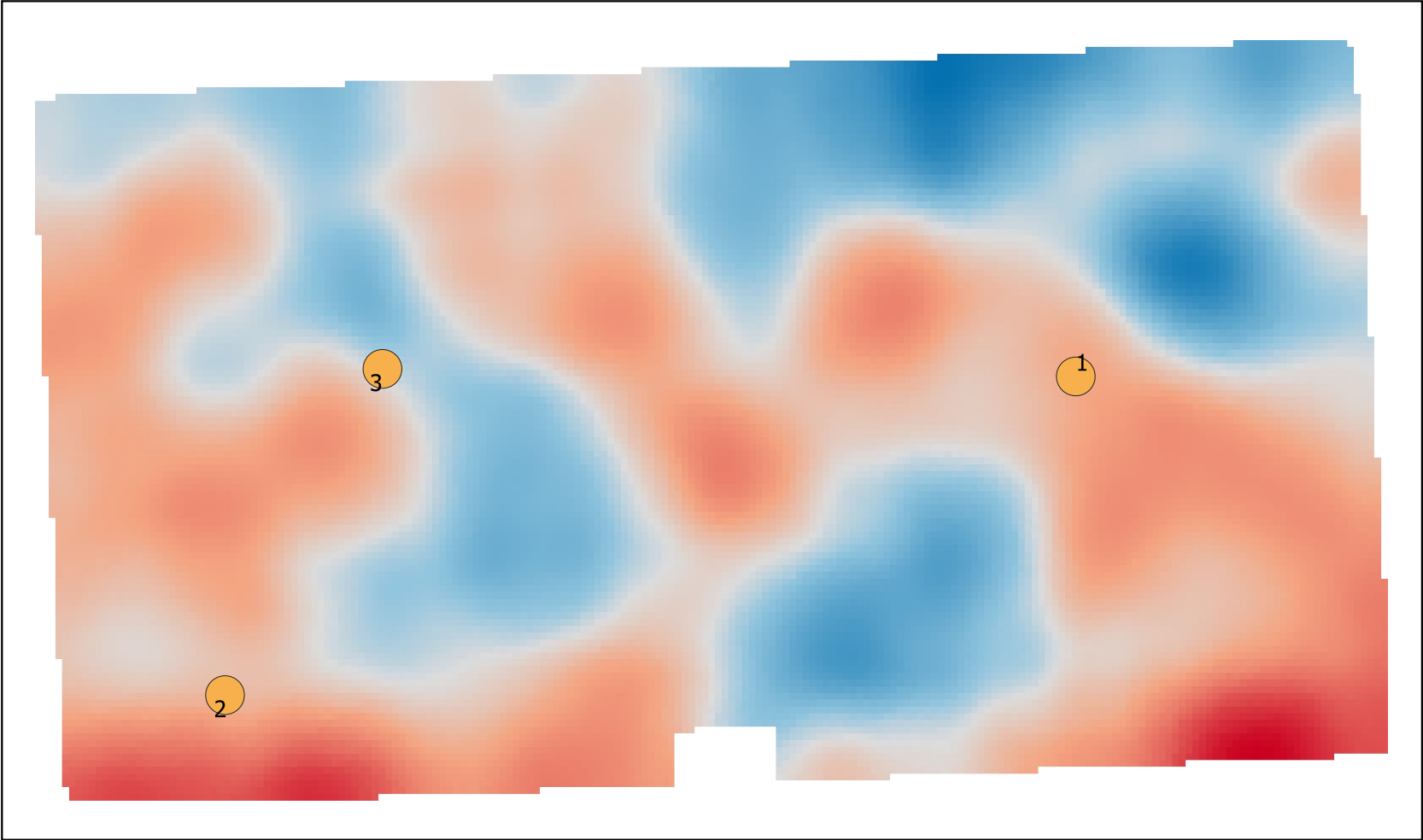
NH4N [lbs/acre]



ID	NH4N
1	2.5
2	1.5
3	1.8

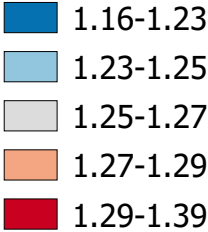


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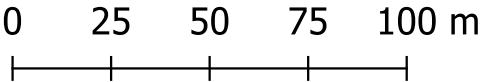


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Columbia Reach	661	Apples	4/27/21	20.57	1.26	2

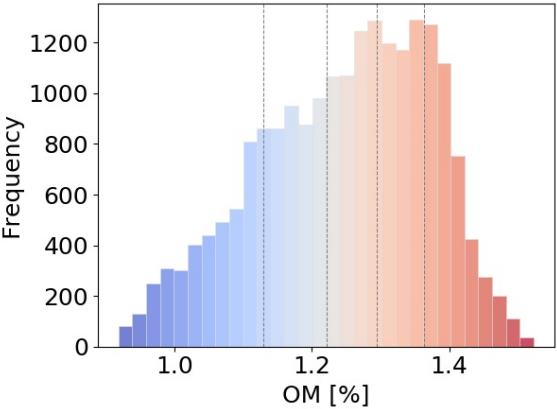
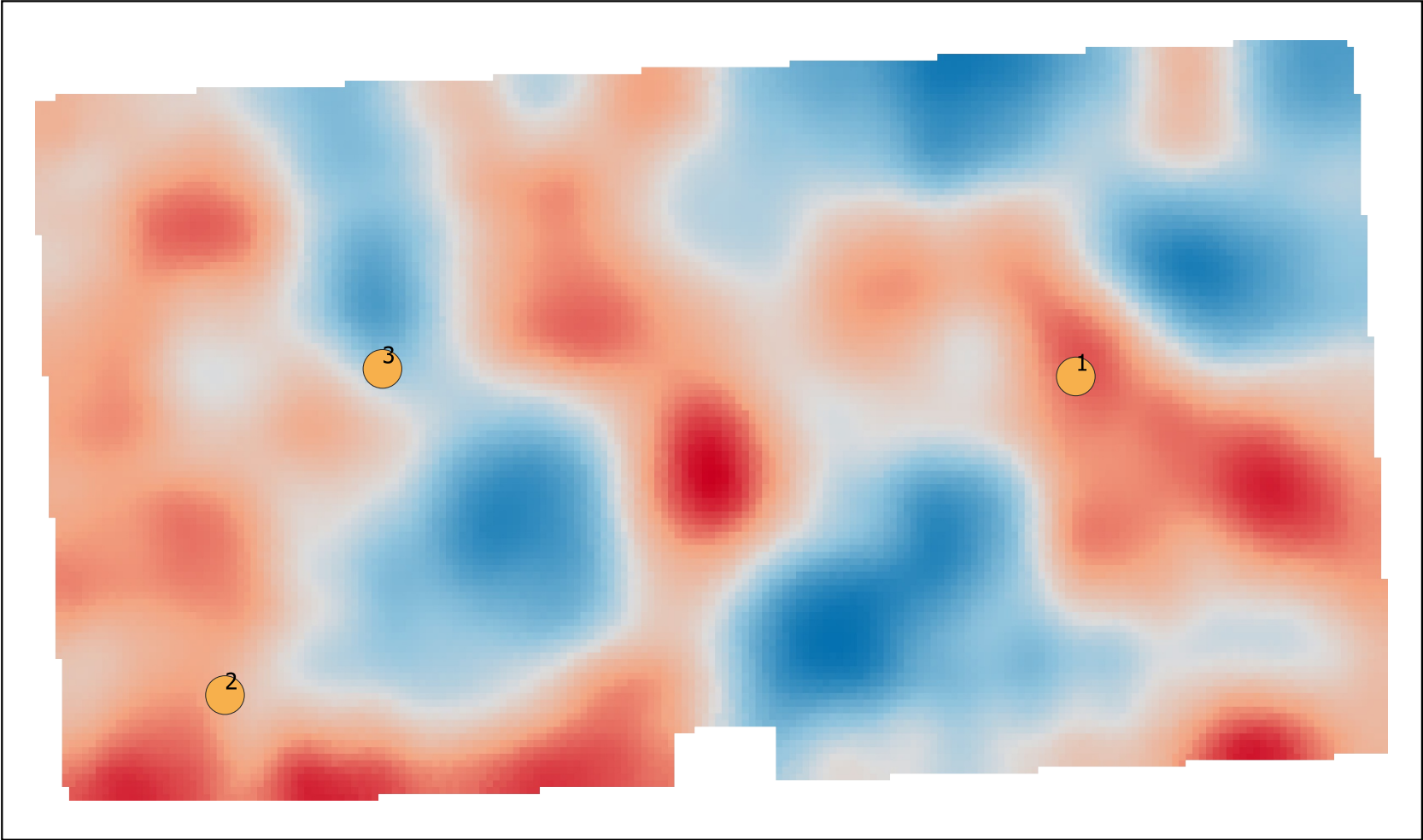
NO3N [lbs/acre]



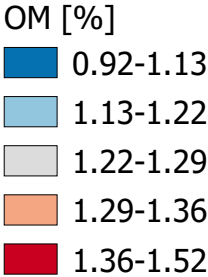
ID	NO3N
1	1.4
2	1.1
3	1.3



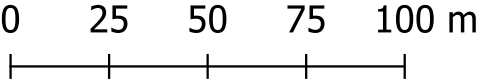
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Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	1.25	10

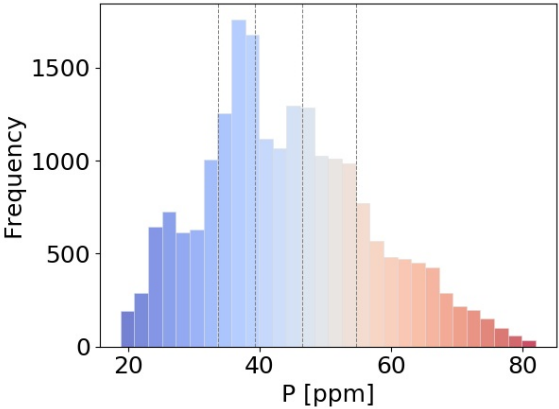
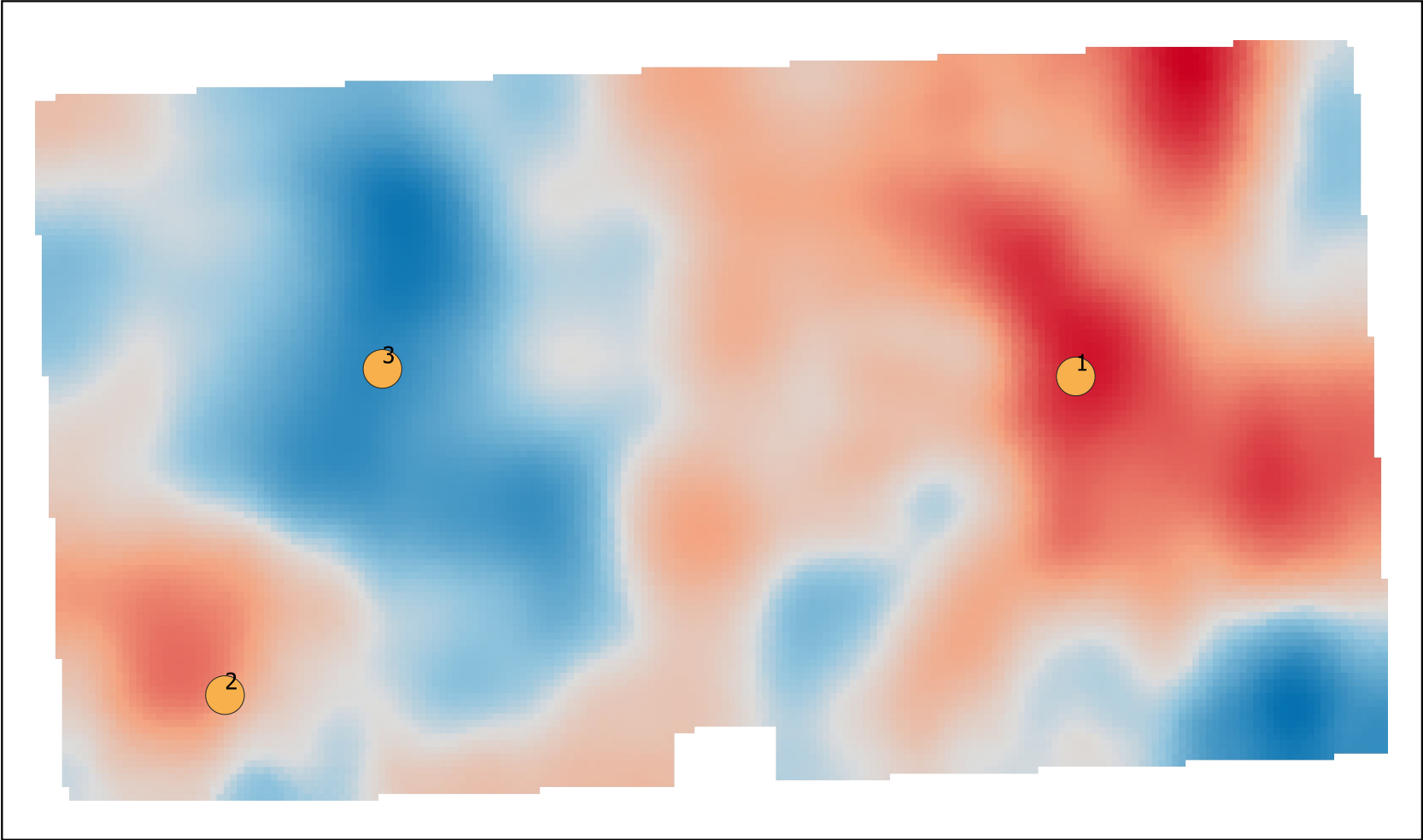


ID	OM
1	1.4
2	1.4
3	1.1

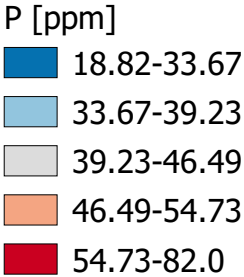


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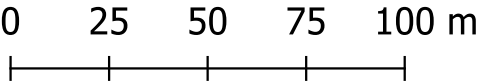
Chiawana:P



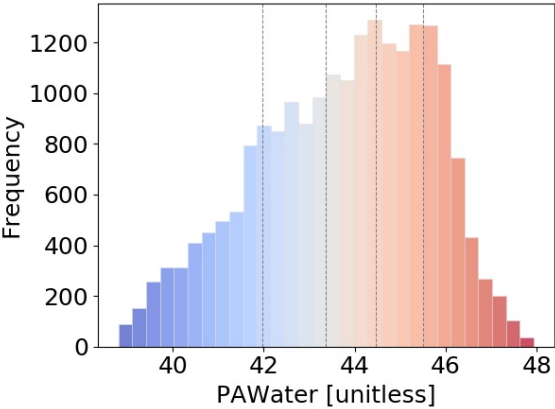
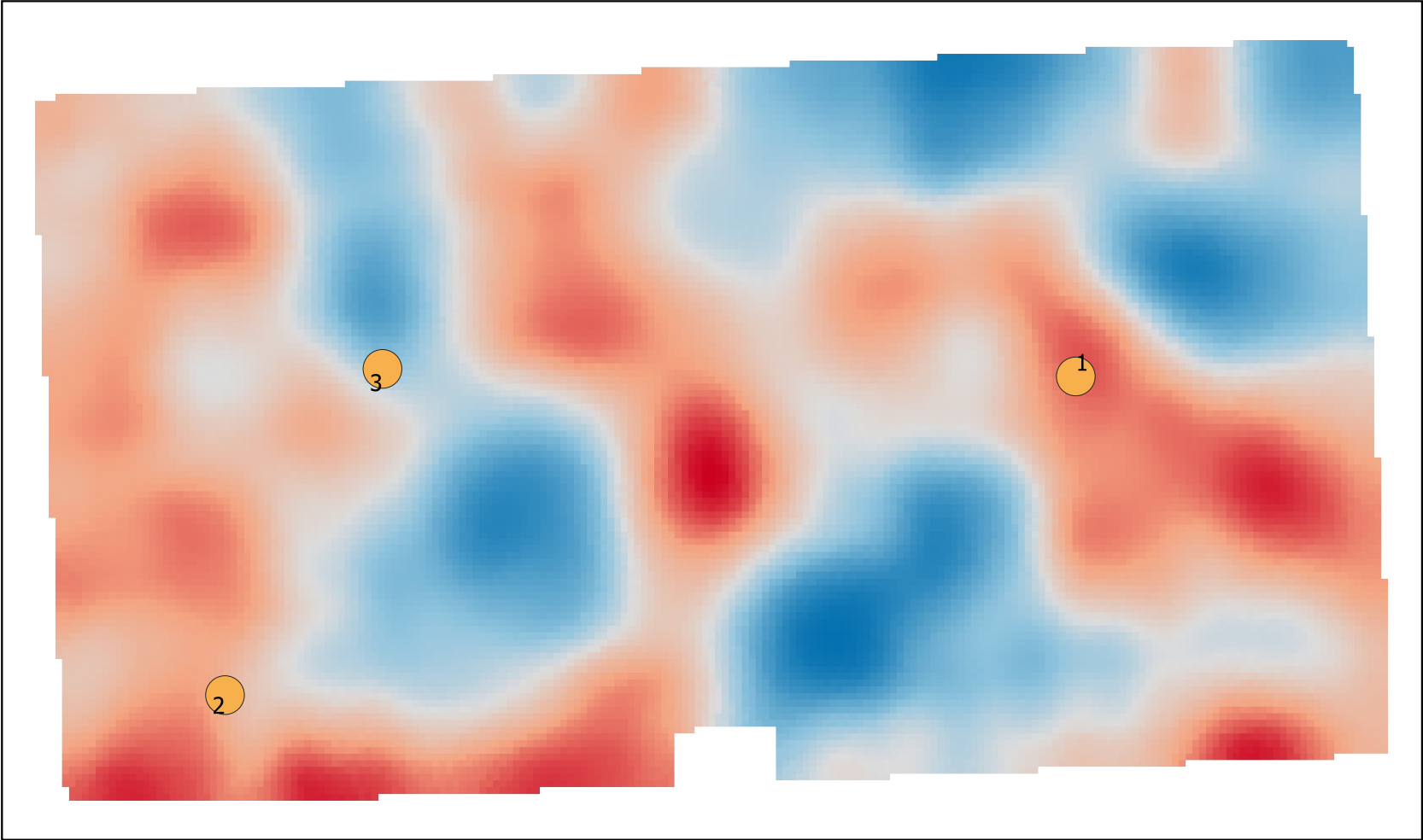
Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	44.23	28



ID	P
1	75
2	42
3	13

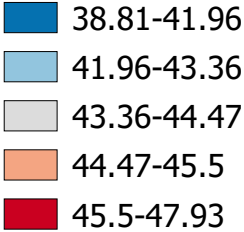


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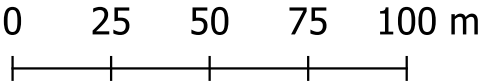


Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	43.72	4

PAWater [unitless]

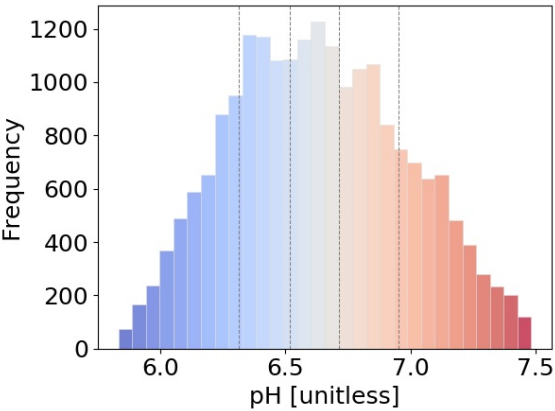
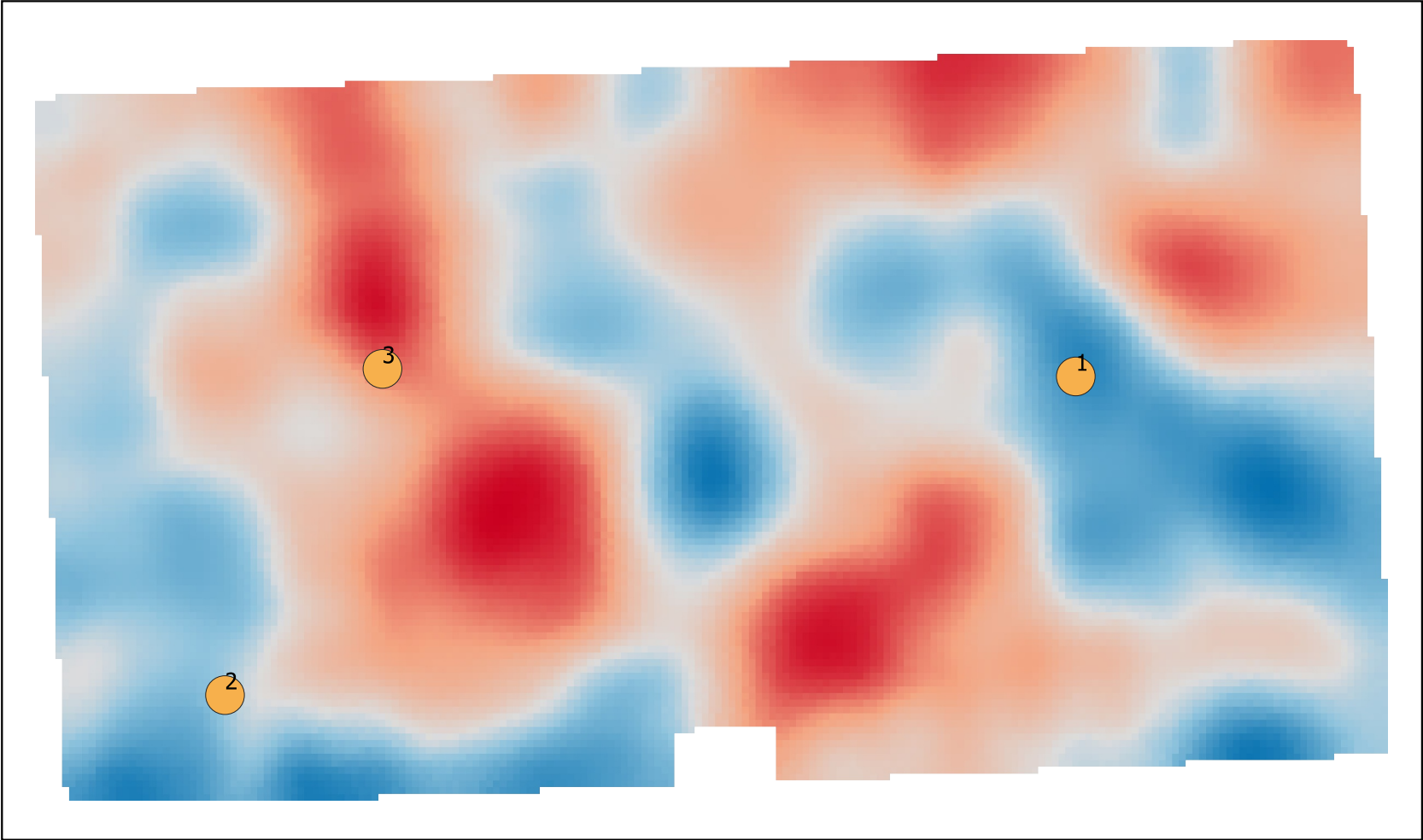


ID	PAWater
1	NAN
2	NAN
3	NAN

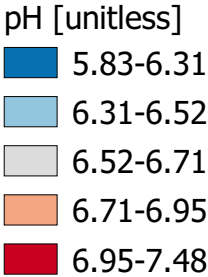


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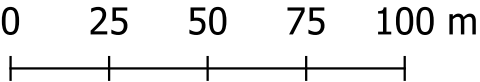
Chiawana:pH



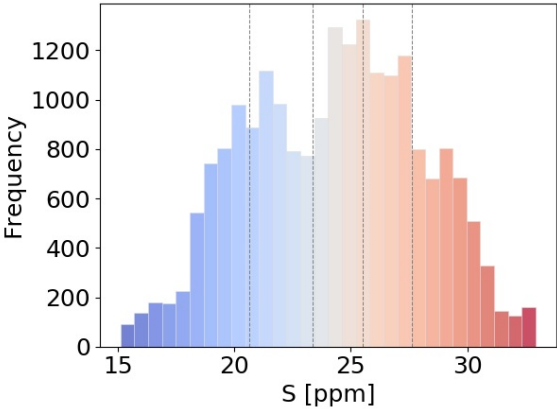
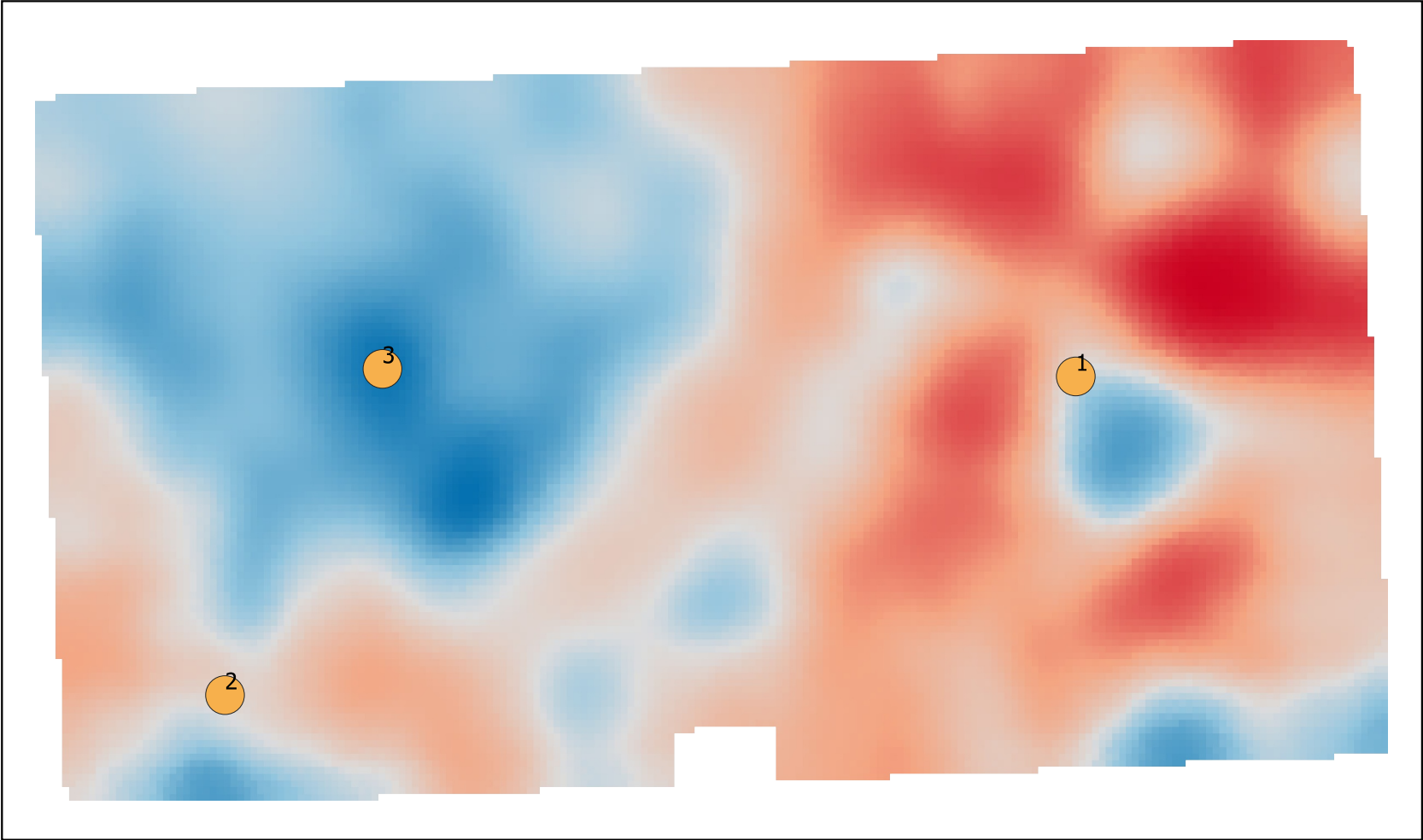
Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	6.63	5



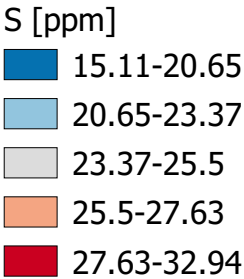
ID	pH
1	6.0
2	6.3
3	7.2



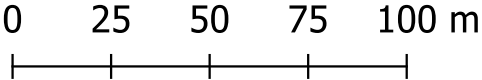
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Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	24.28	15

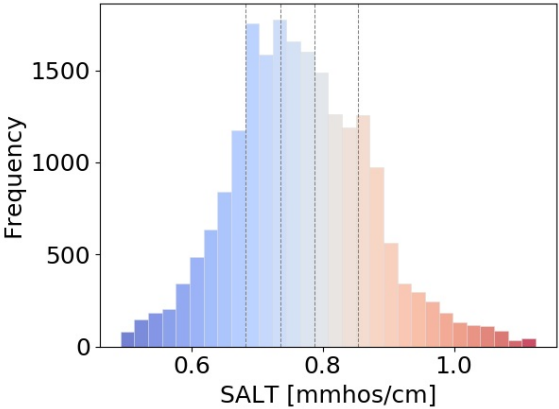
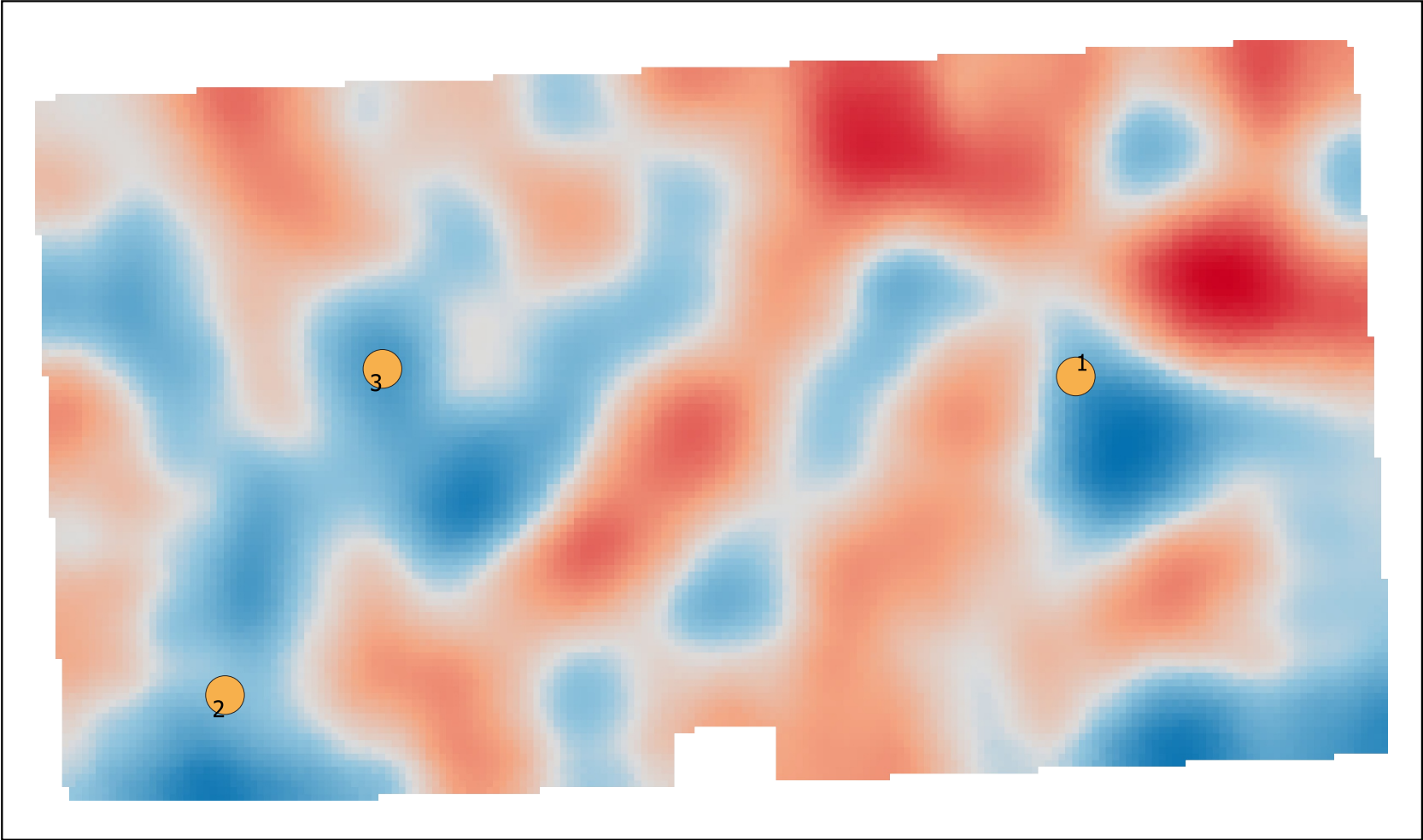


ID	S
1	28.41
2	25.55
3	6.27



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Chiawana:SALT

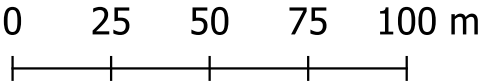


Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	0.77	13

SALT [mmhos/cm]

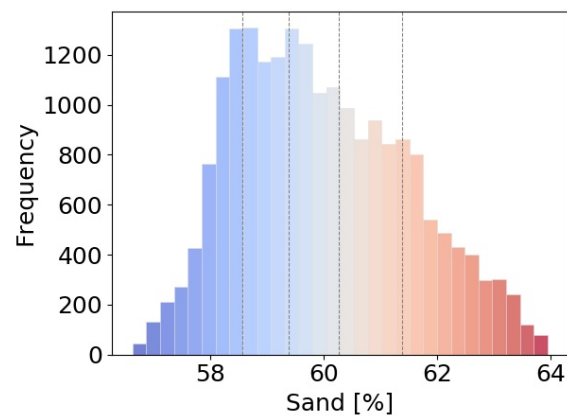
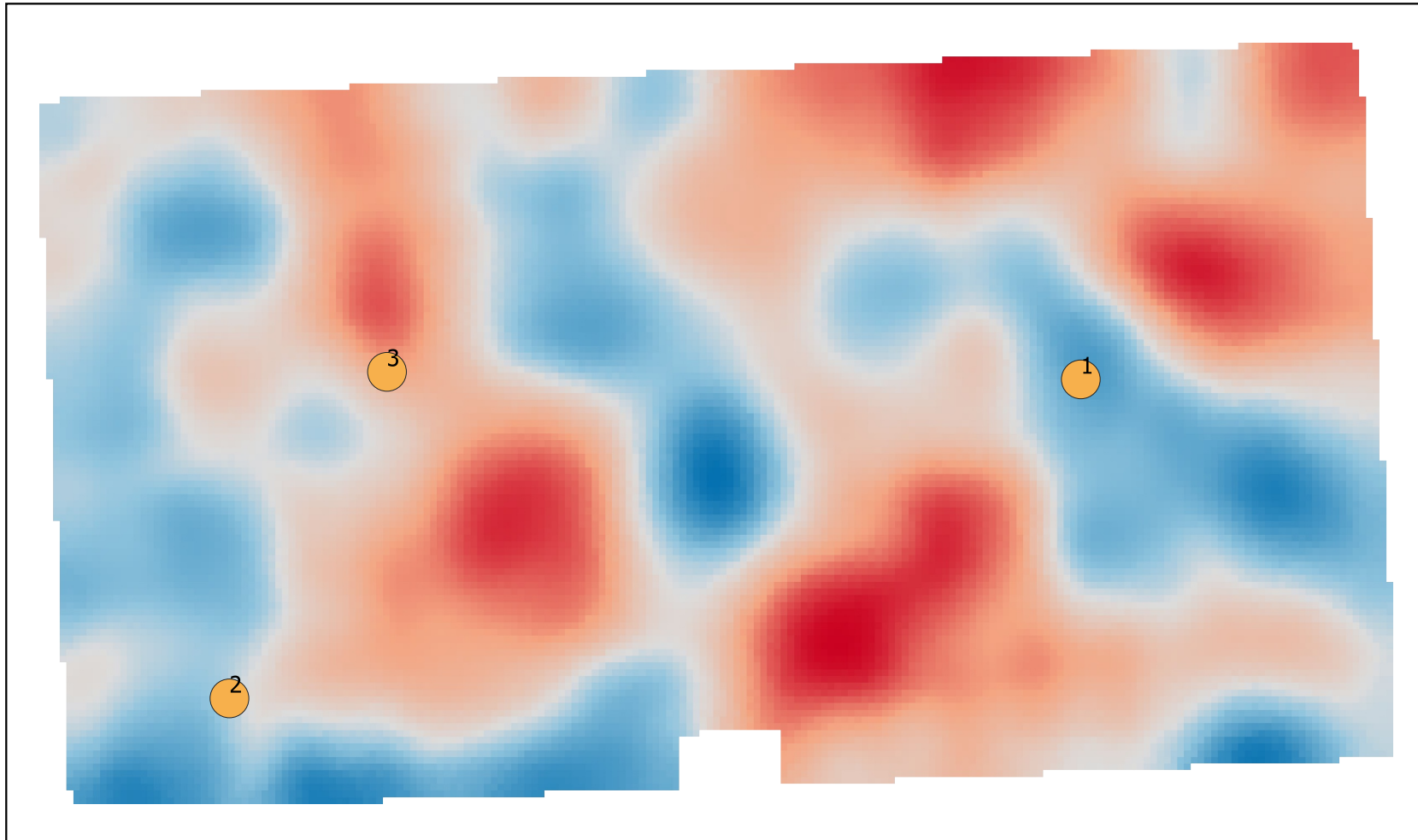
- 0.49-0.68
- 0.68-0.73
- 0.73-0.79
- 0.79-0.85
- 0.85-1.12

ID	SALT
1	NAN
2	NAN
3	NAN

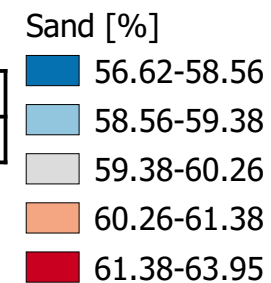


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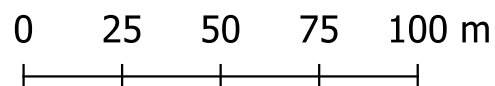
Chiawana:Sand



Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	59.97	2

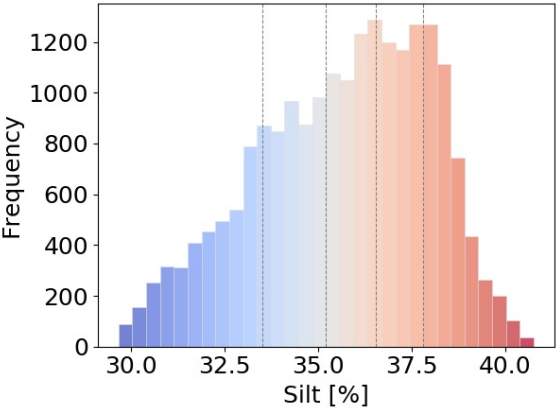
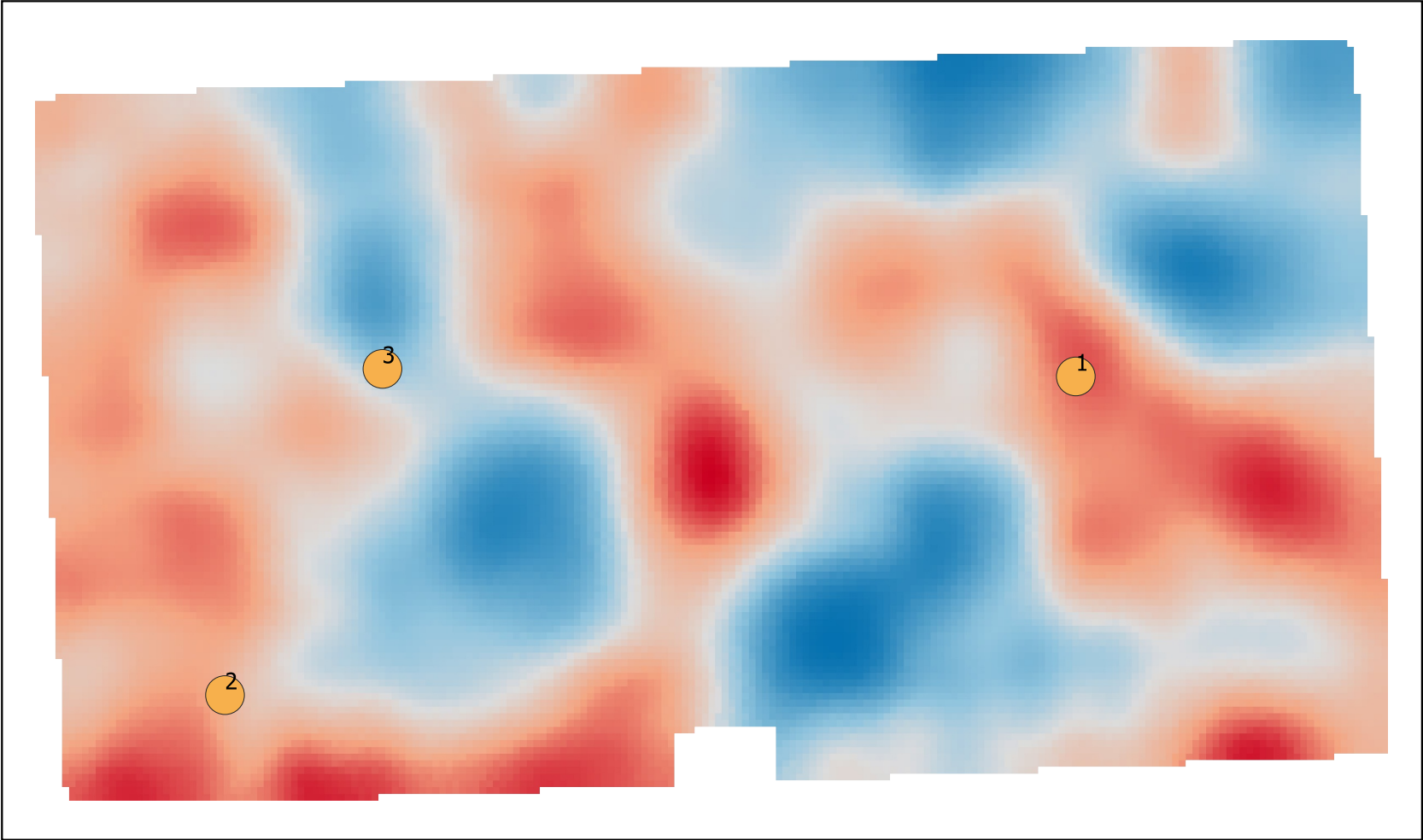


ID	Sand
1	57
2	60
3	61

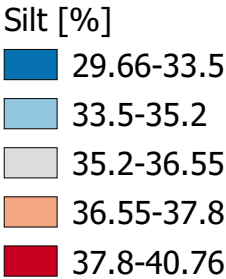


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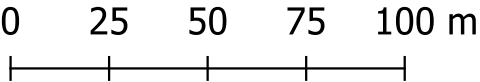
Chiawana:Silt



Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	35.64	6

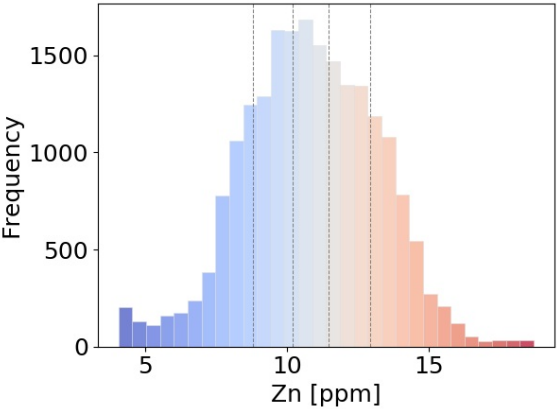
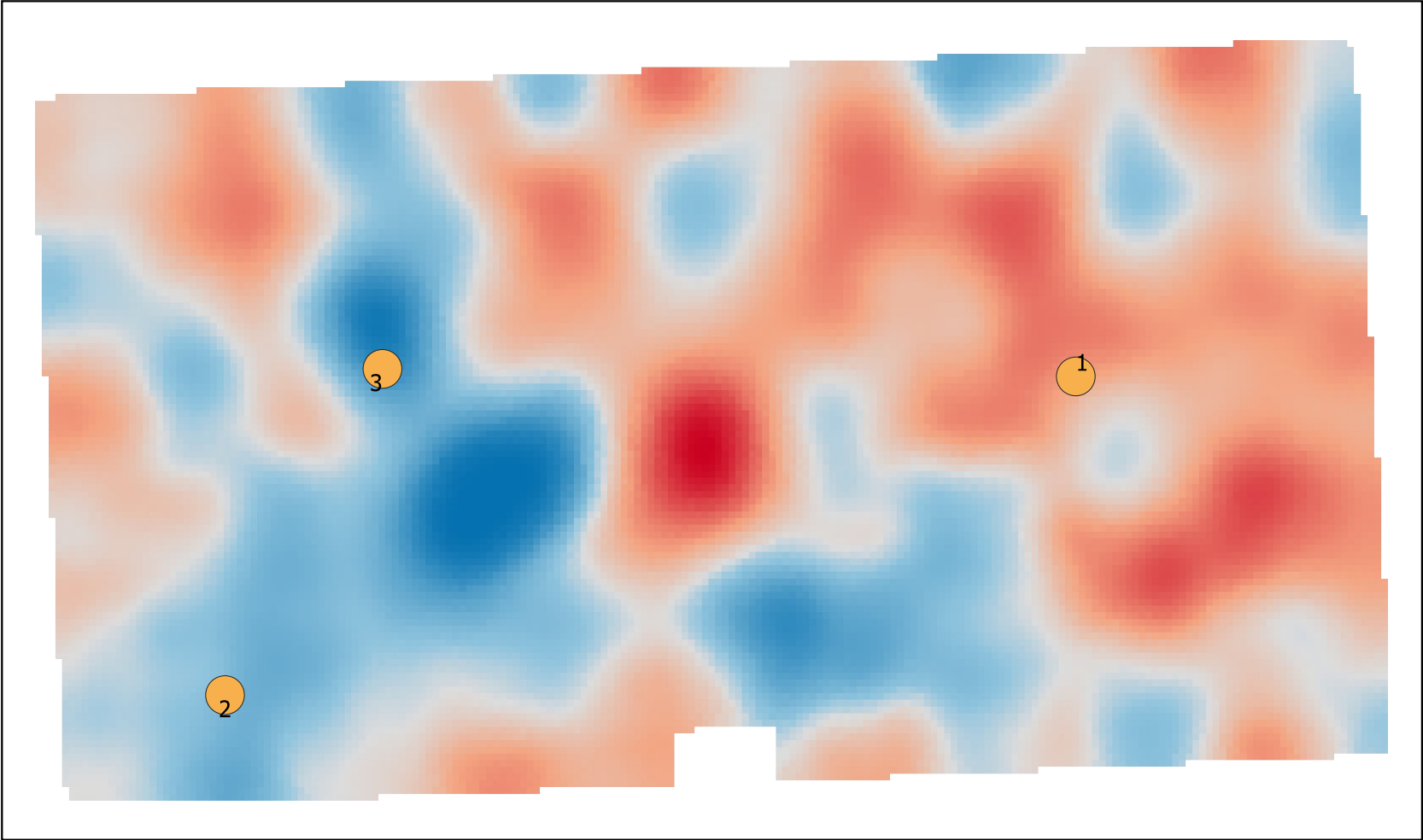


ID	Silt
1	40
2	36
3	34

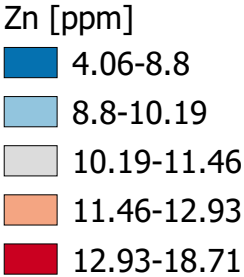


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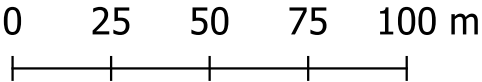
Chiawana:Zn



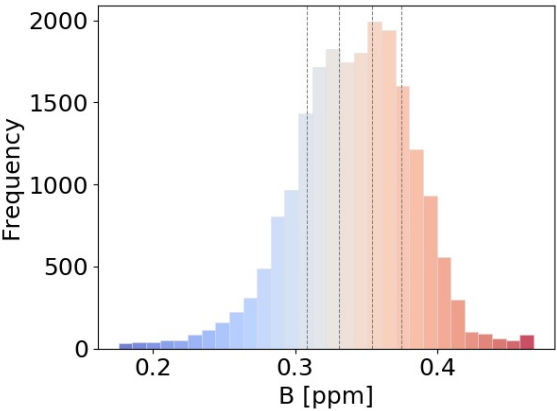
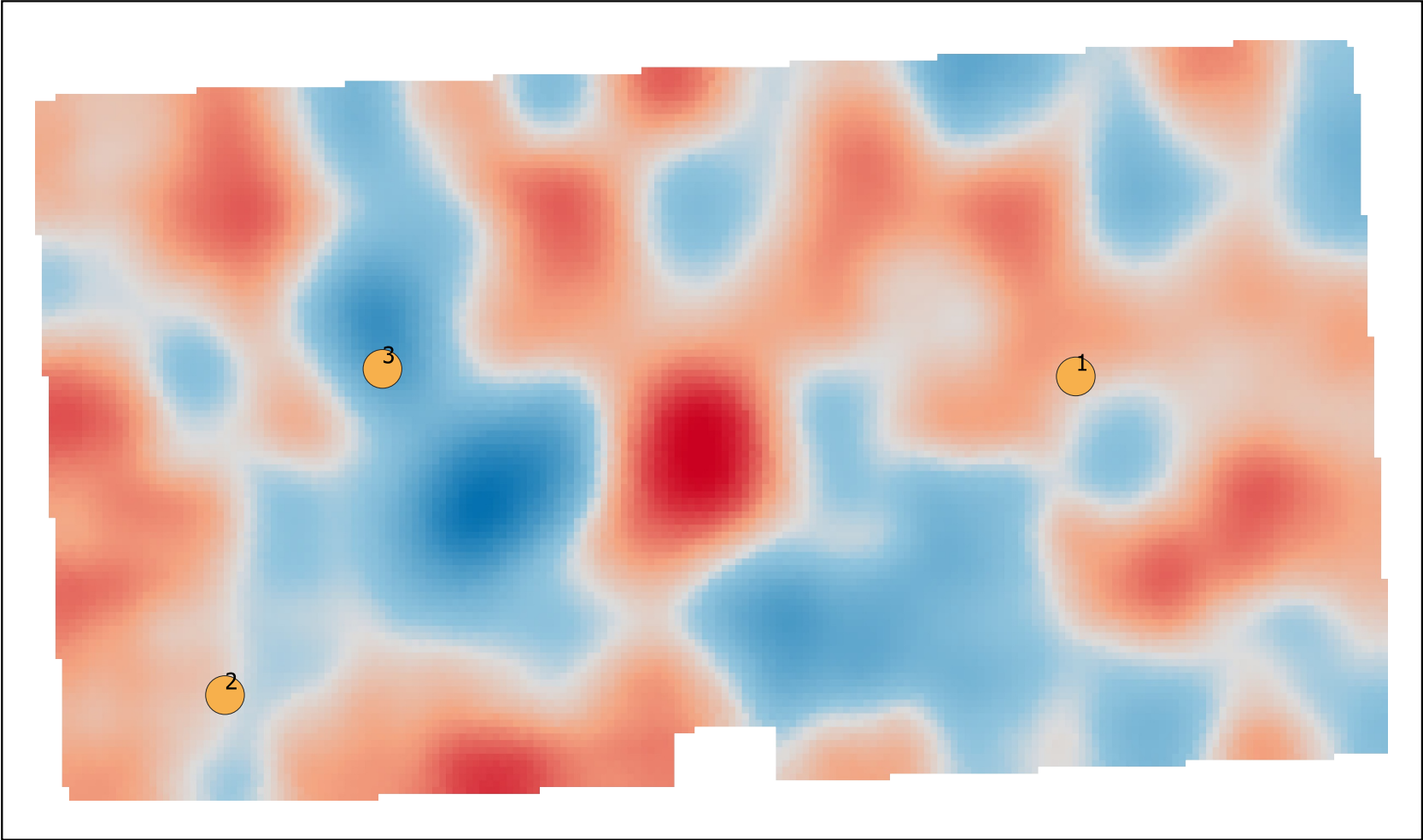
Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	10.83	22



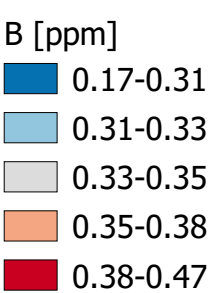
ID	Zn
1	15.2
2	6.9
3	5.8



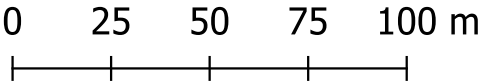
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Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	0.34	12

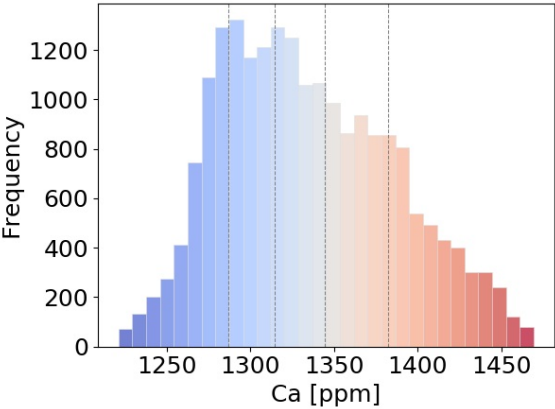
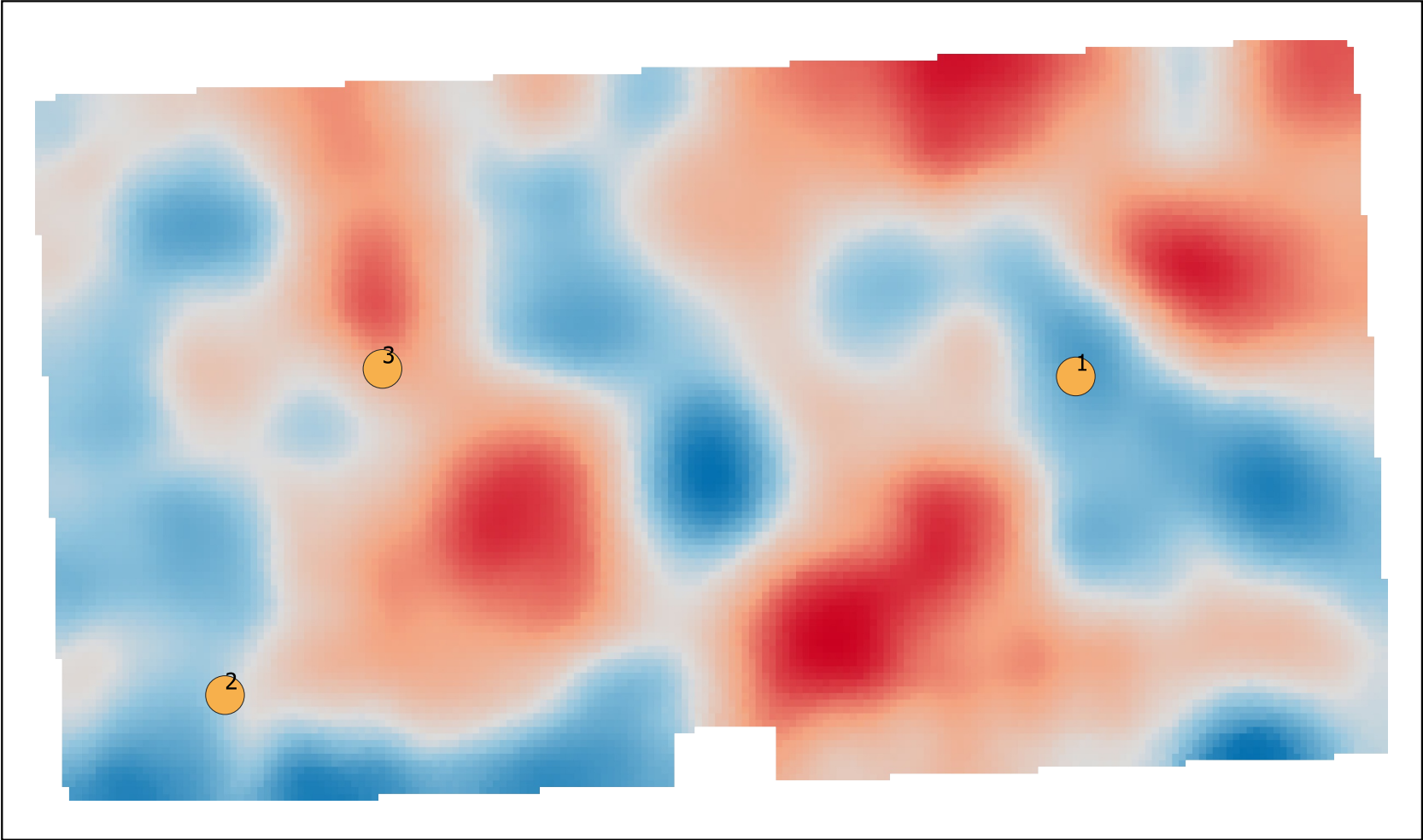


ID	B
1	0.34
2	0.36
3	0.23

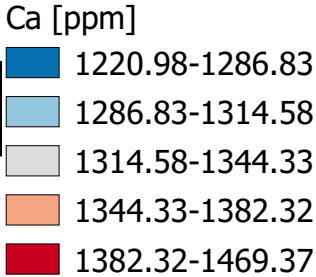


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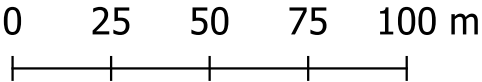
Chiawana:Ca



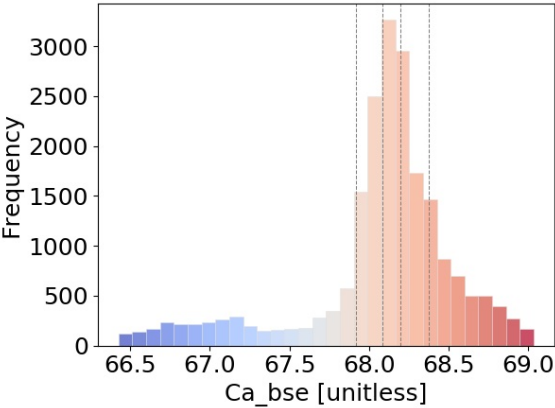
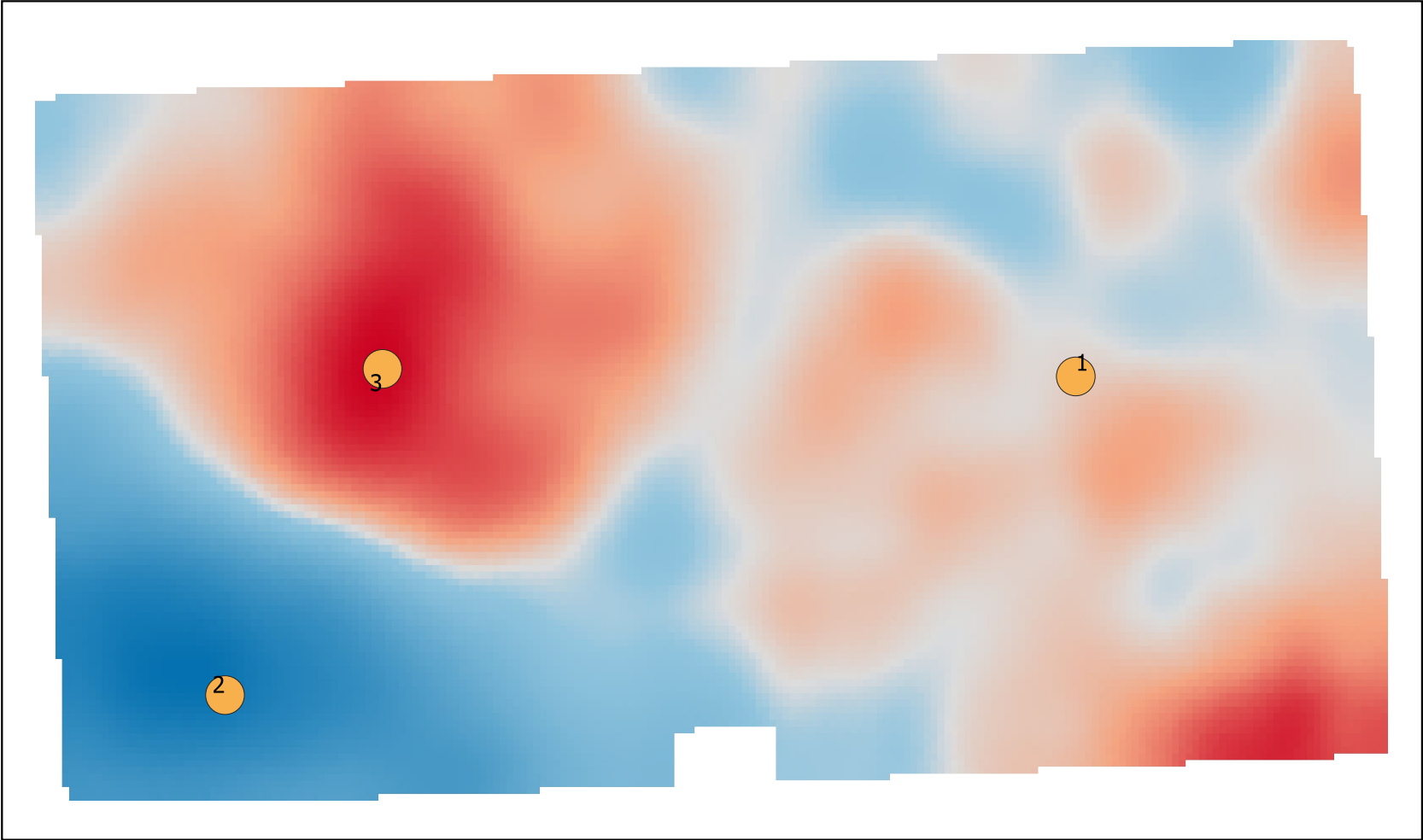
Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	1334.6	3



ID	Ca
1	1160.0
2	1460.0
3	1320.0

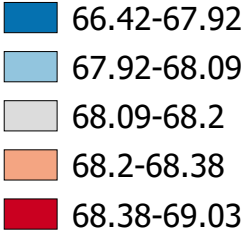


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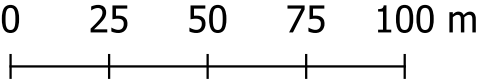


Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	68.07	0

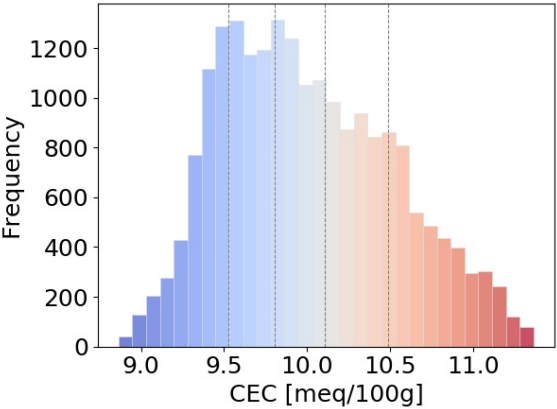
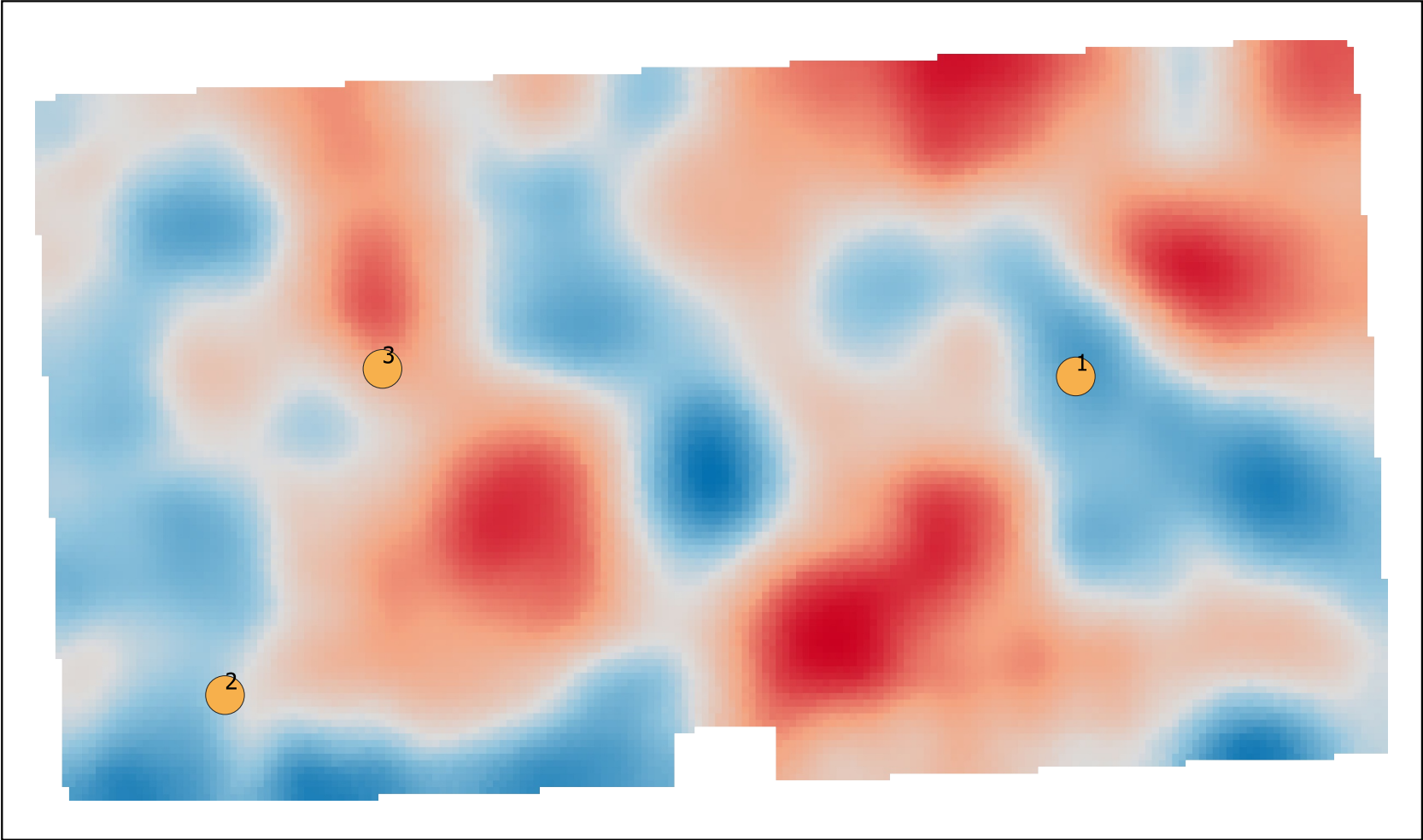
Ca_bse [unitless]



ID	Ca_bse
1	NAN
2	NAN
3	NAN

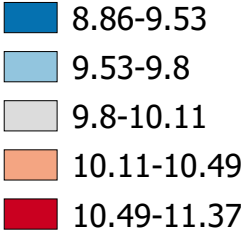


*This document is designed to provide you a "snapshot" of your field at a glance. Legend descriptions are not recommendations.

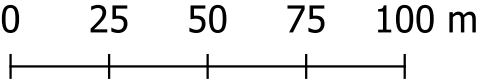


Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	10.01	5

CEC [meq/100g]

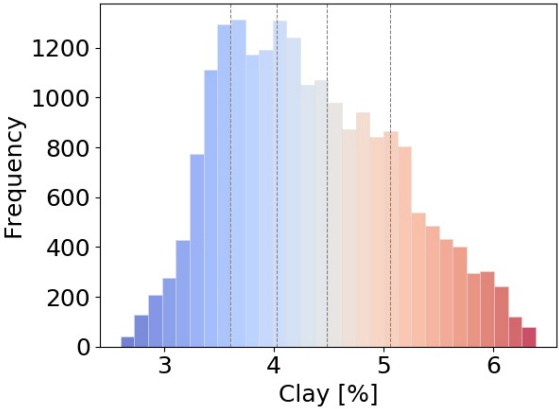
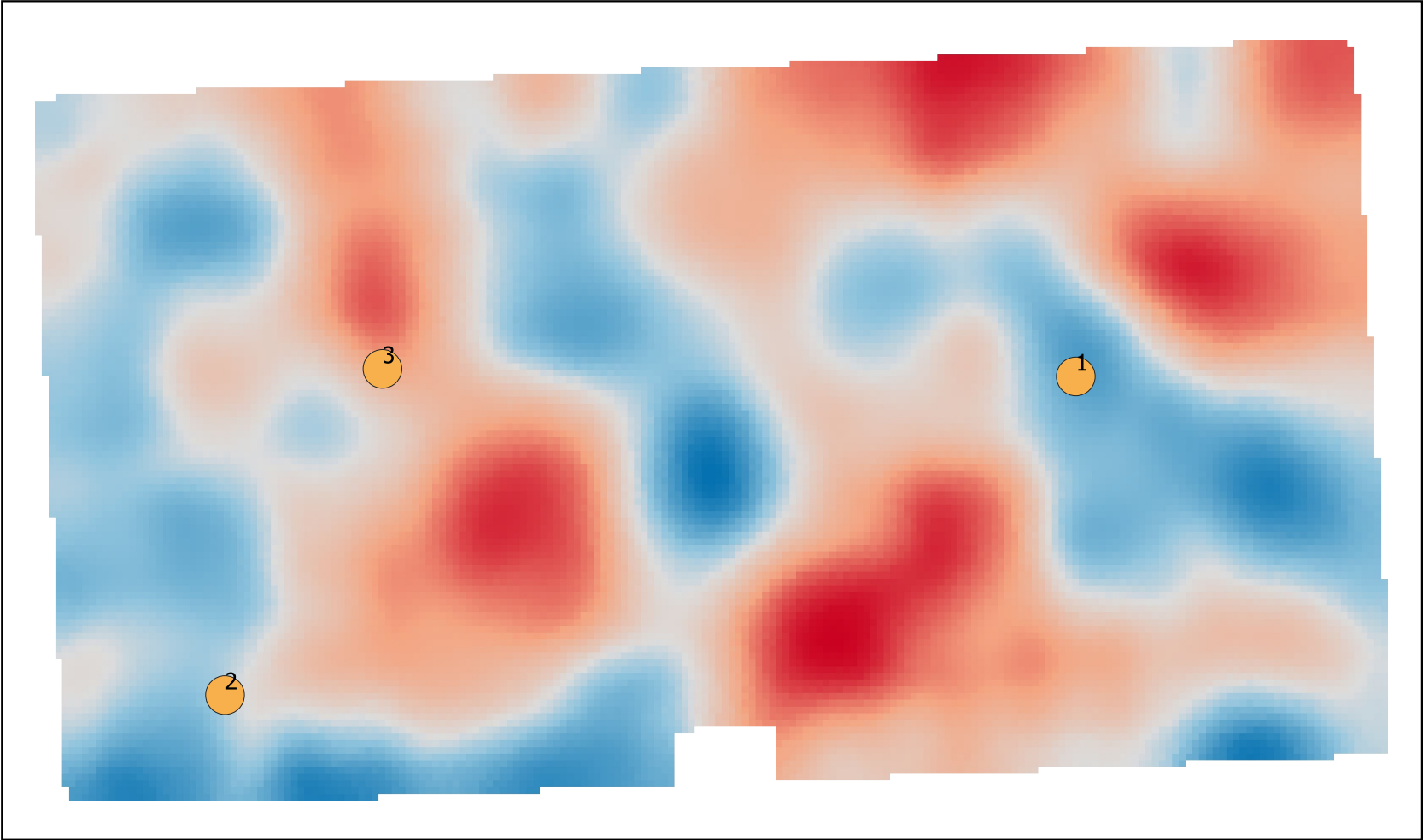


ID	CEC
1	NAN
2	NAN
3	NAN

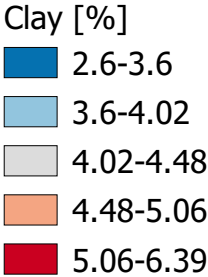


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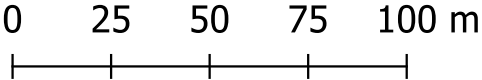
Chiawana:Clay



Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	4.33	18

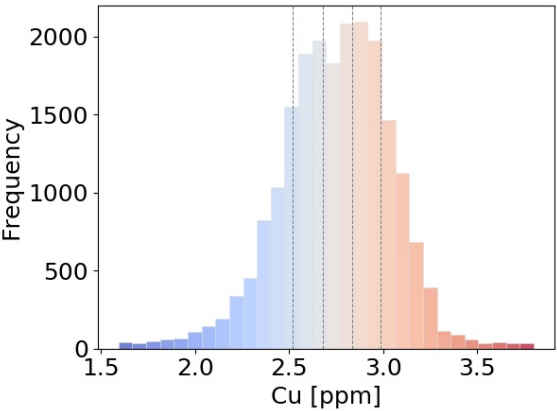
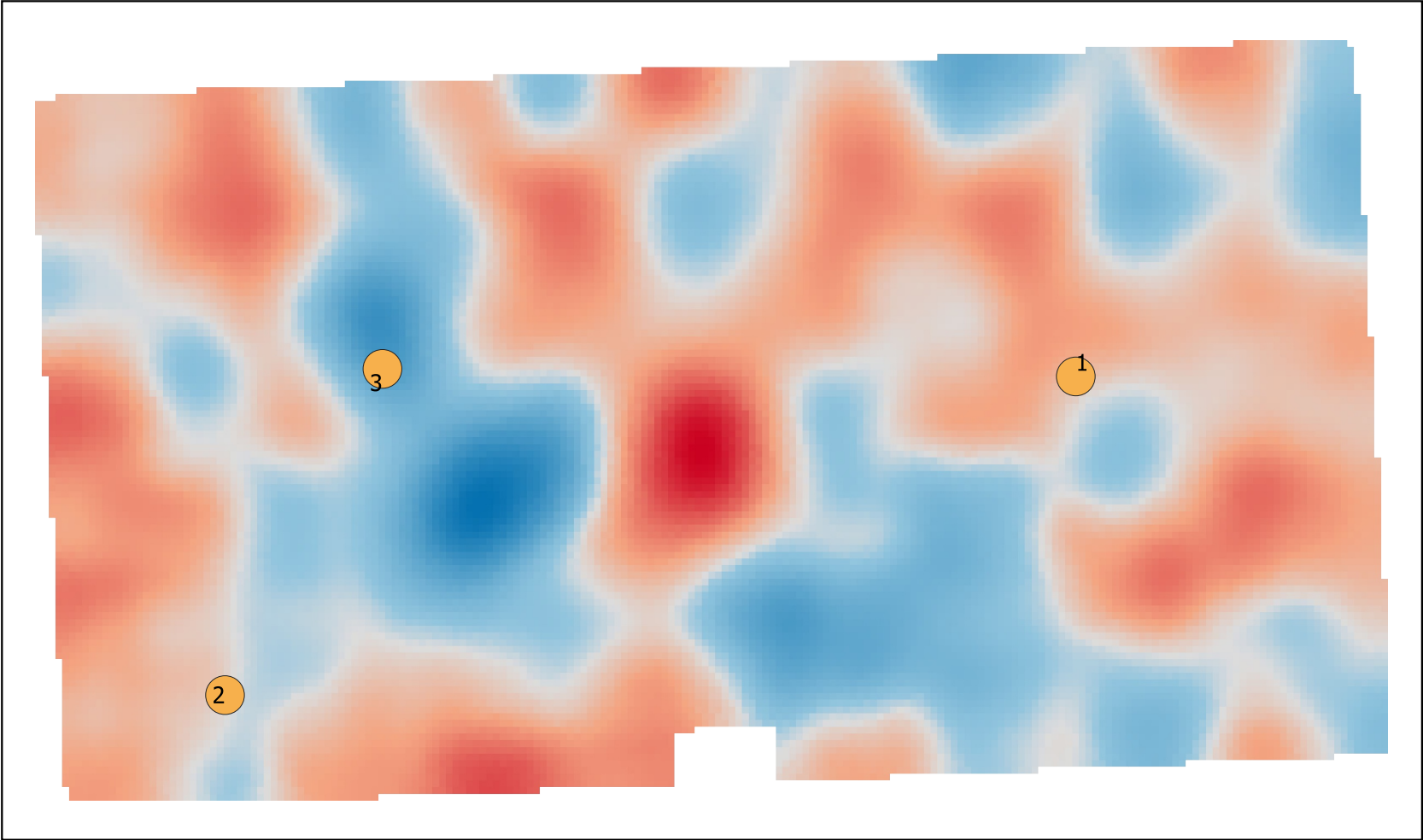


ID	Clay
1	3
2	4
3	5

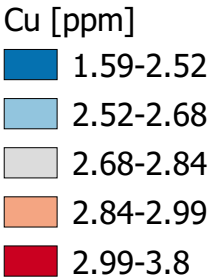


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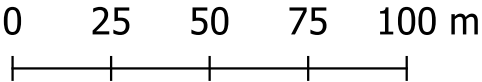
Chiawana:Cu



Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	2.75	10

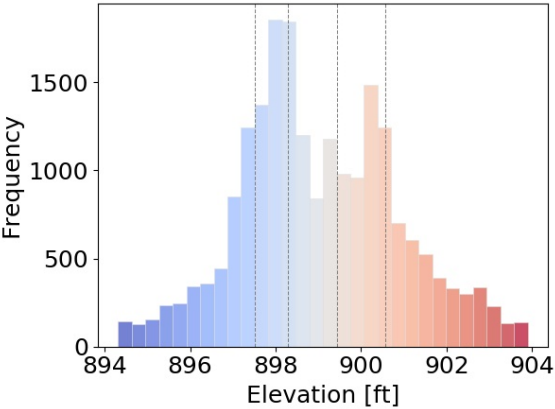
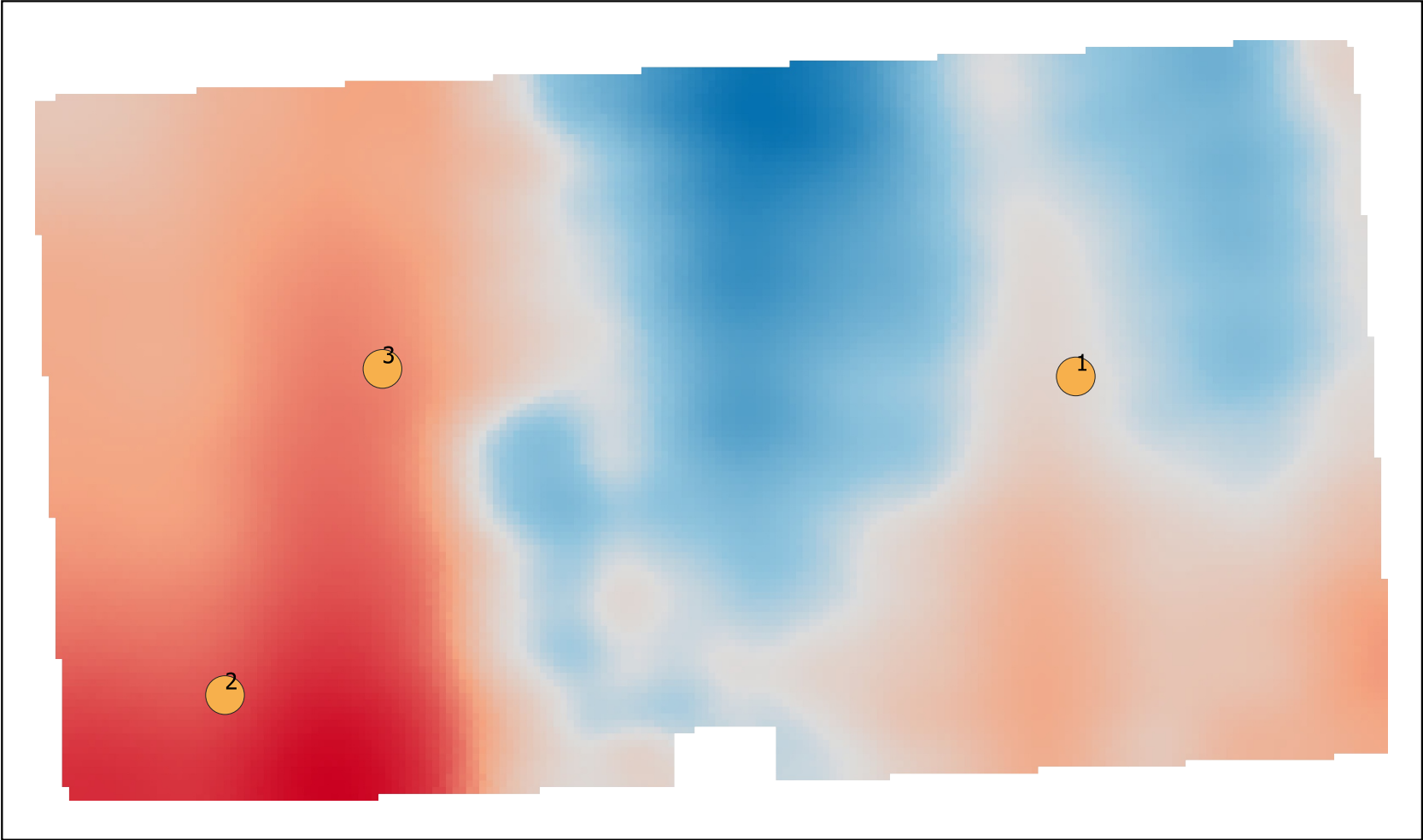


ID	Cu
1	2.4
2	3.3
3	1.9








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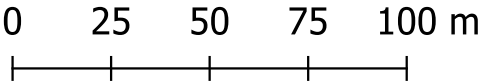
Chiawana:Elevation



Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	899.02	0

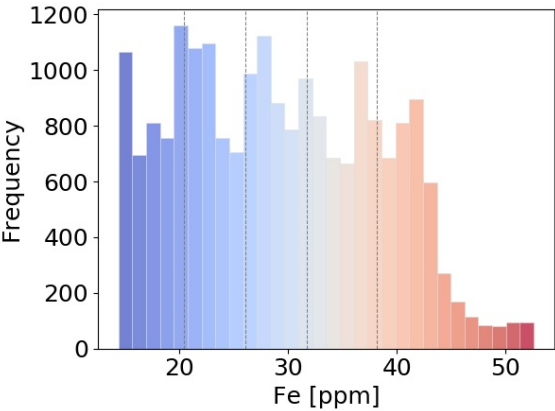
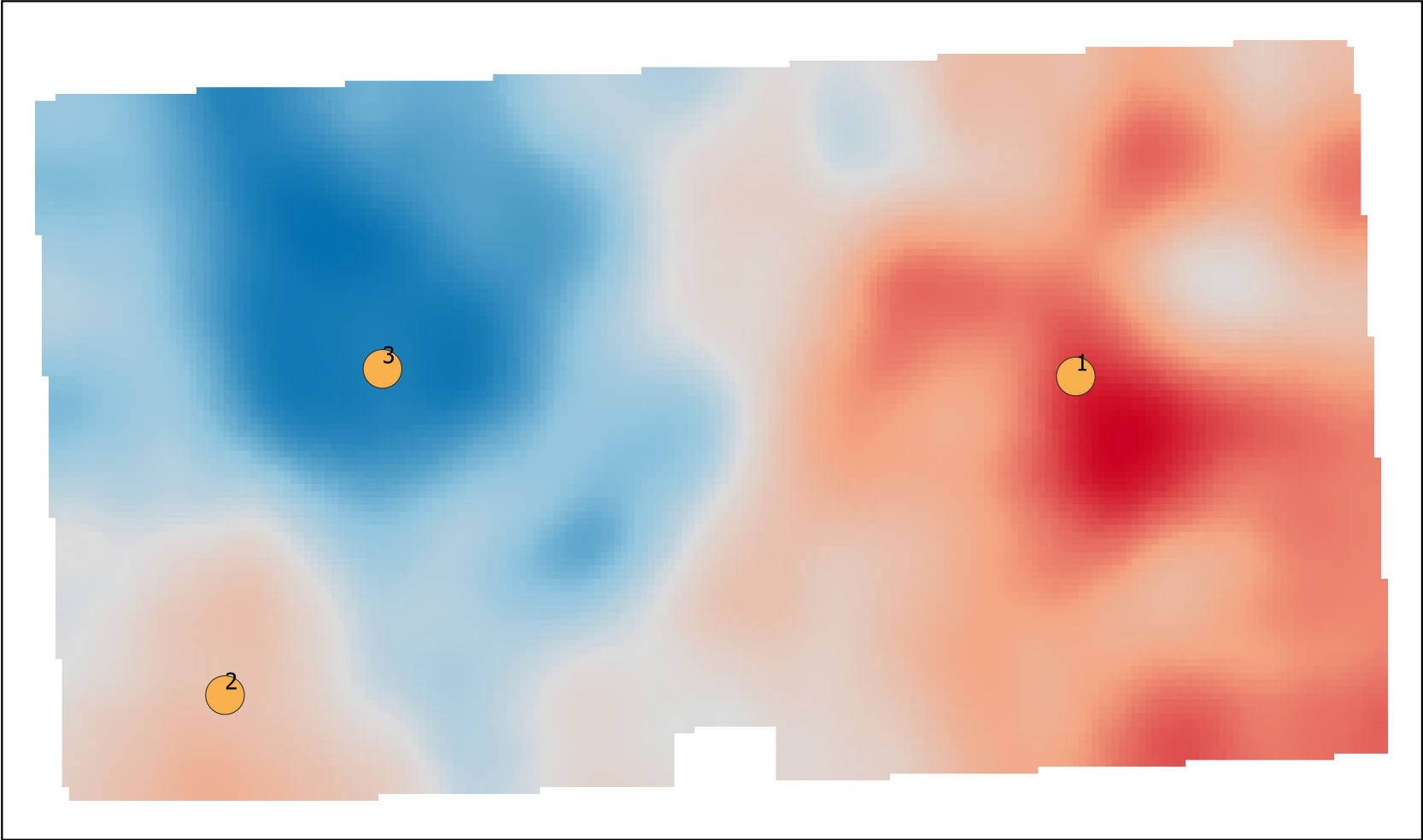
Elevation [ft]	
	894.32-897.51
	897.51-898.3
	898.3-899.44
	899.44-900.56
	900.56-903.89

ID	Elevation
1	NAN
2	NAN
3	NAN

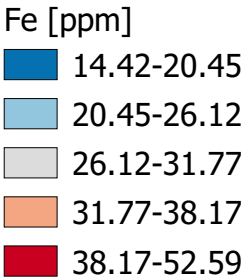


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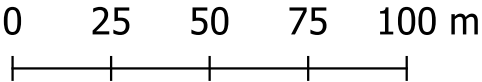
Chiawana:Fe



Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	29.3	30

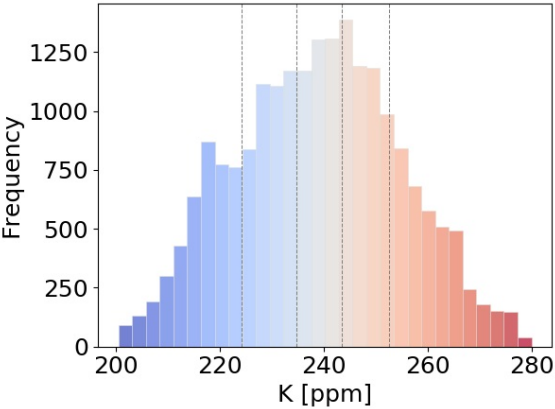
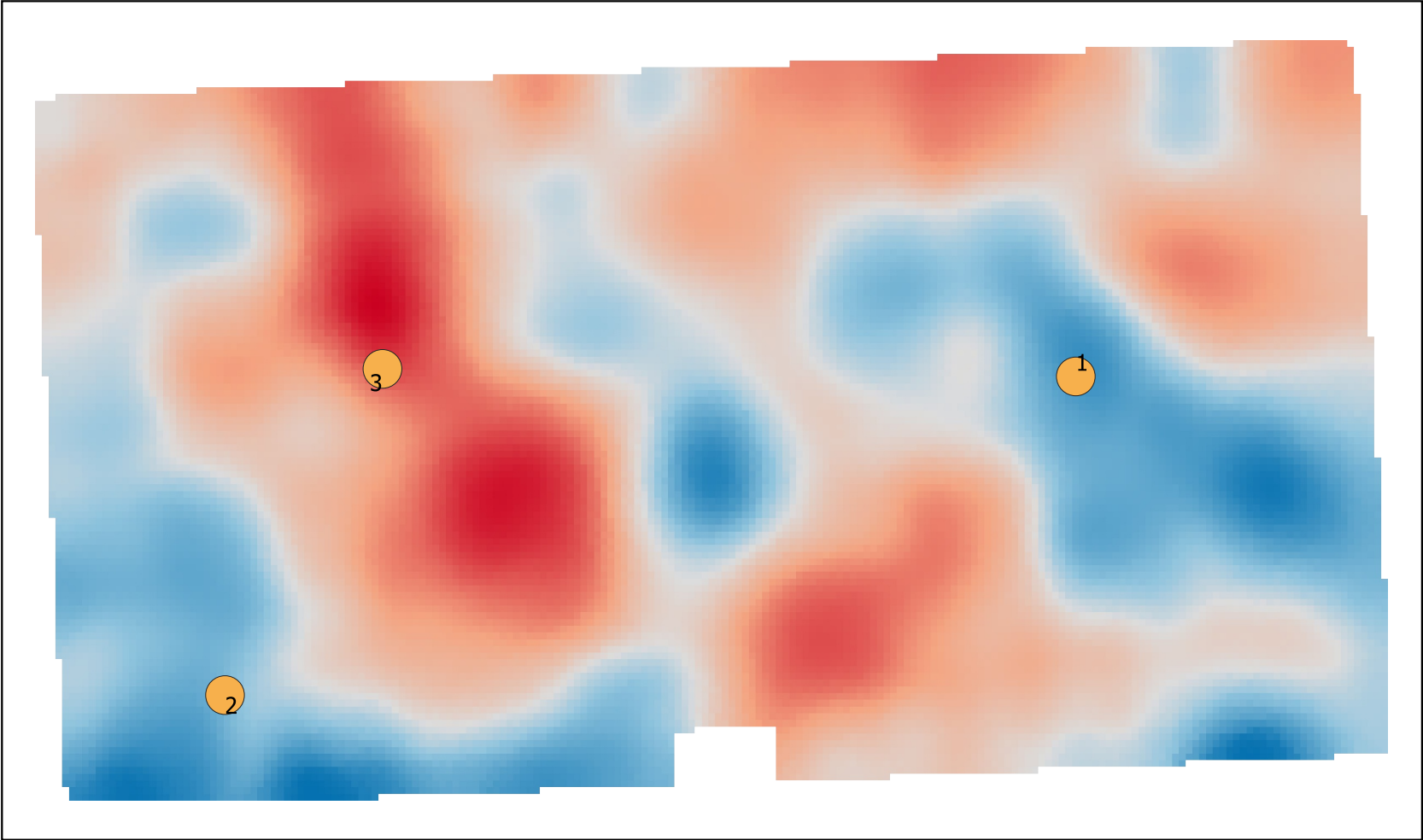


ID	Fe
1	54
2	37
3	11

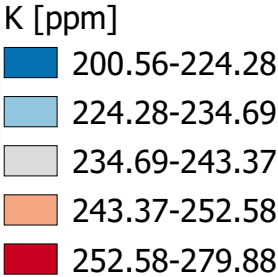


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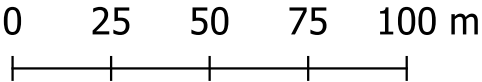
Chiawana:K



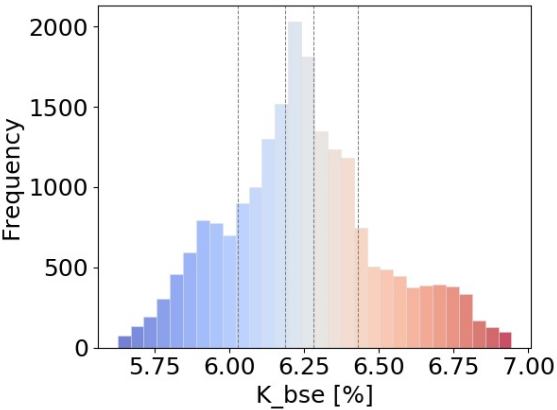
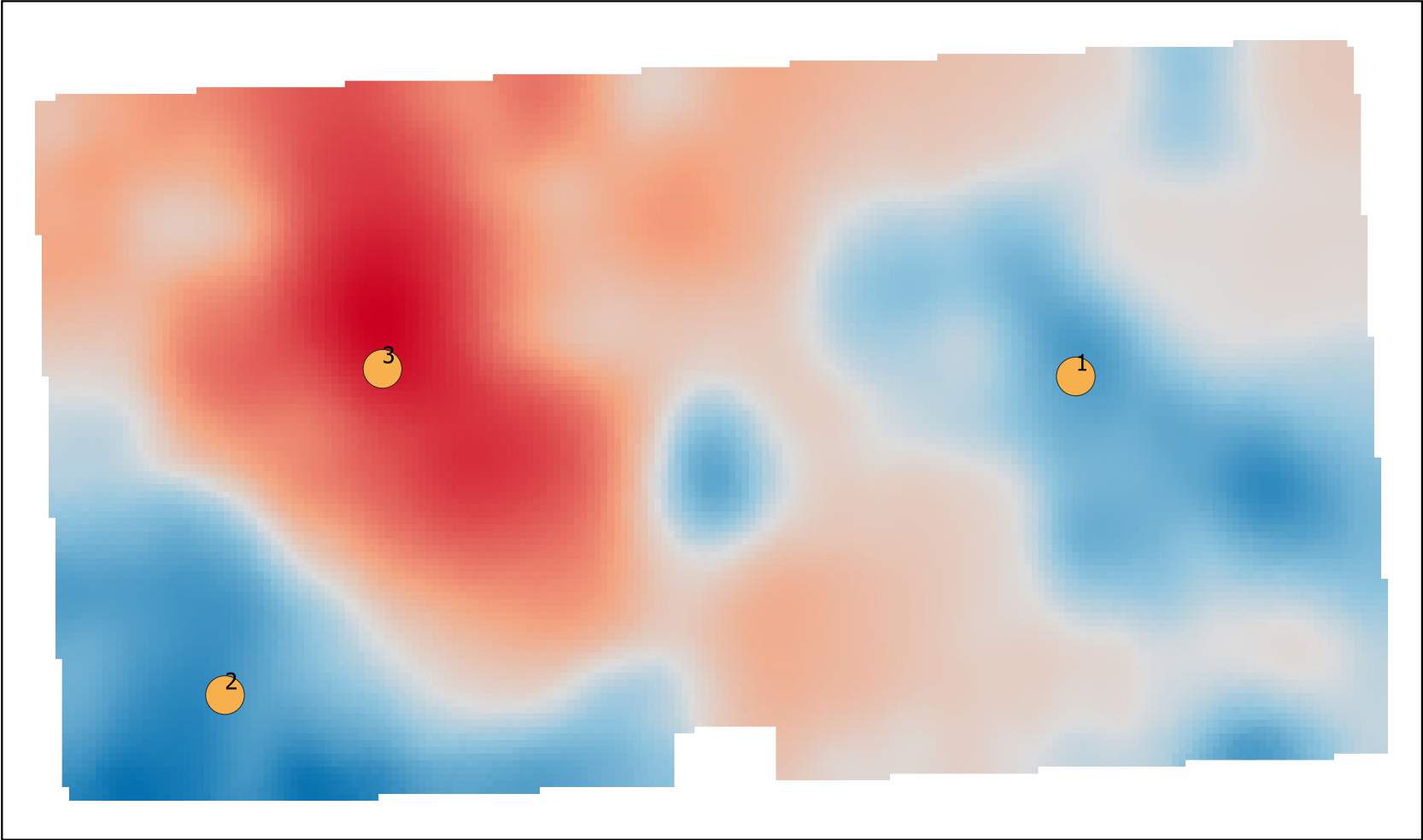
Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	238.87	6



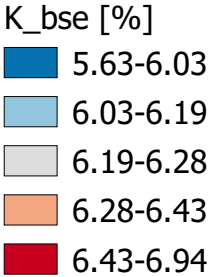
ID	K
1	216
2	210
3	274



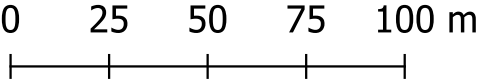
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Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	6.24	4

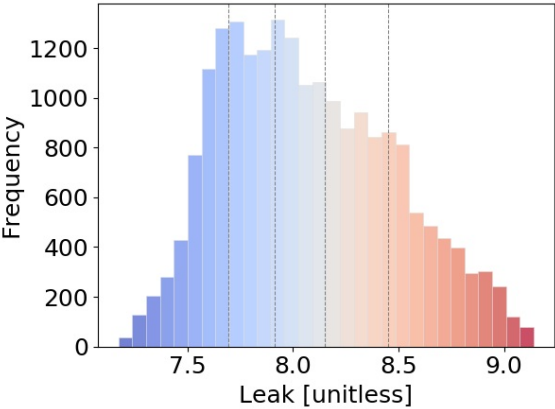
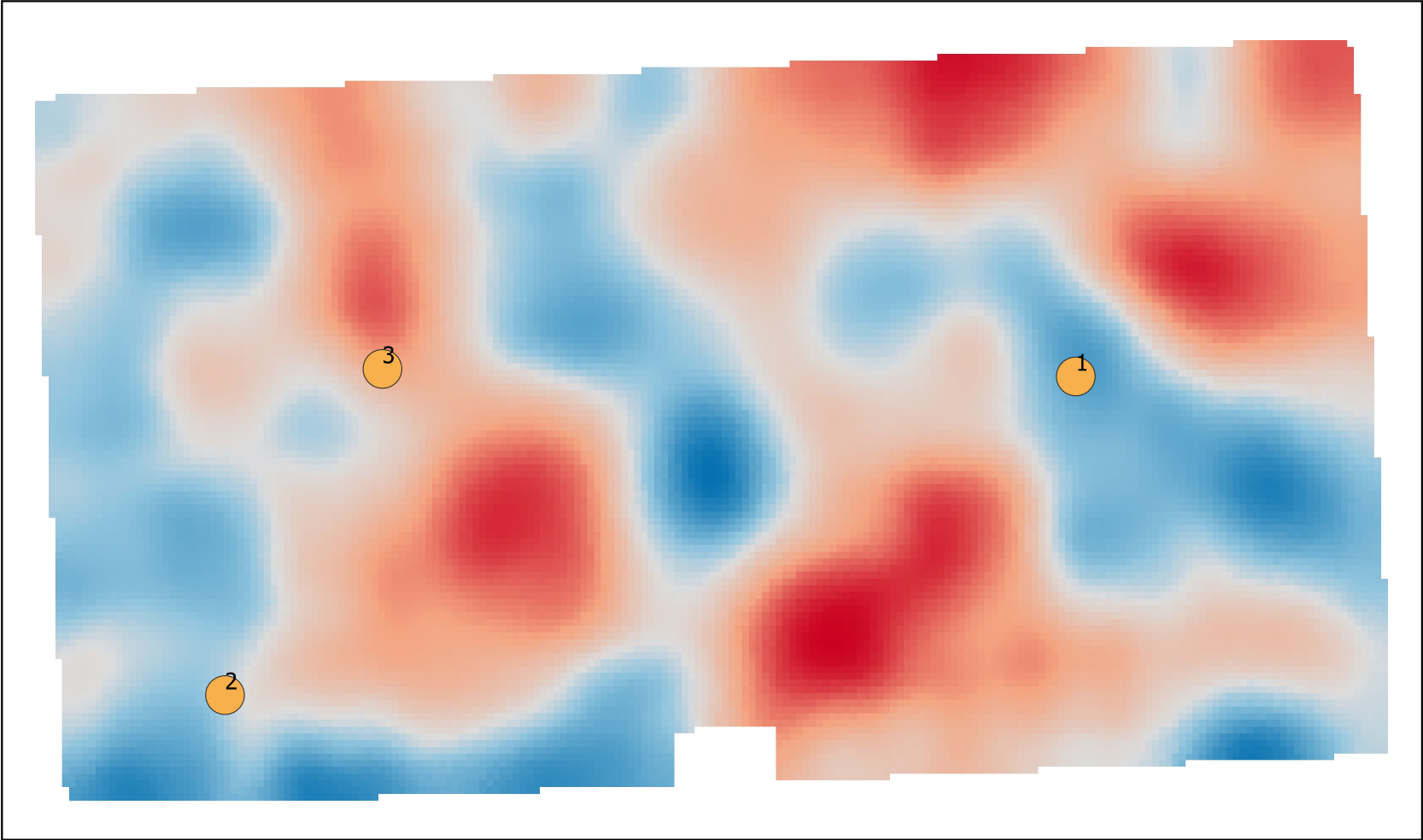


ID	K_bse
1	NAN
2	NAN
3	NAN



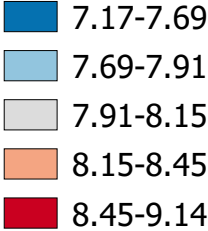
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Chiawana:Leak

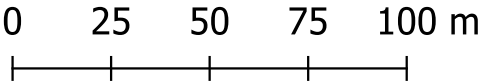


Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	8.07	5

Leak [unitless]

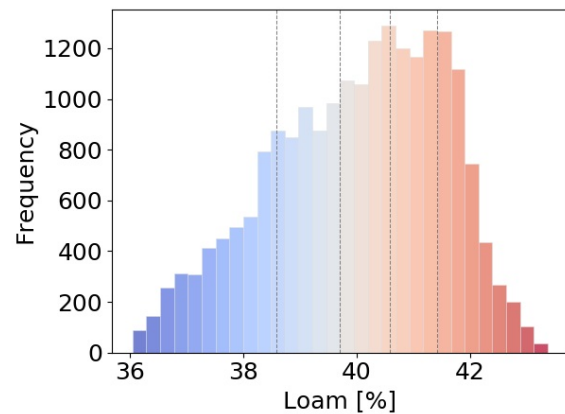
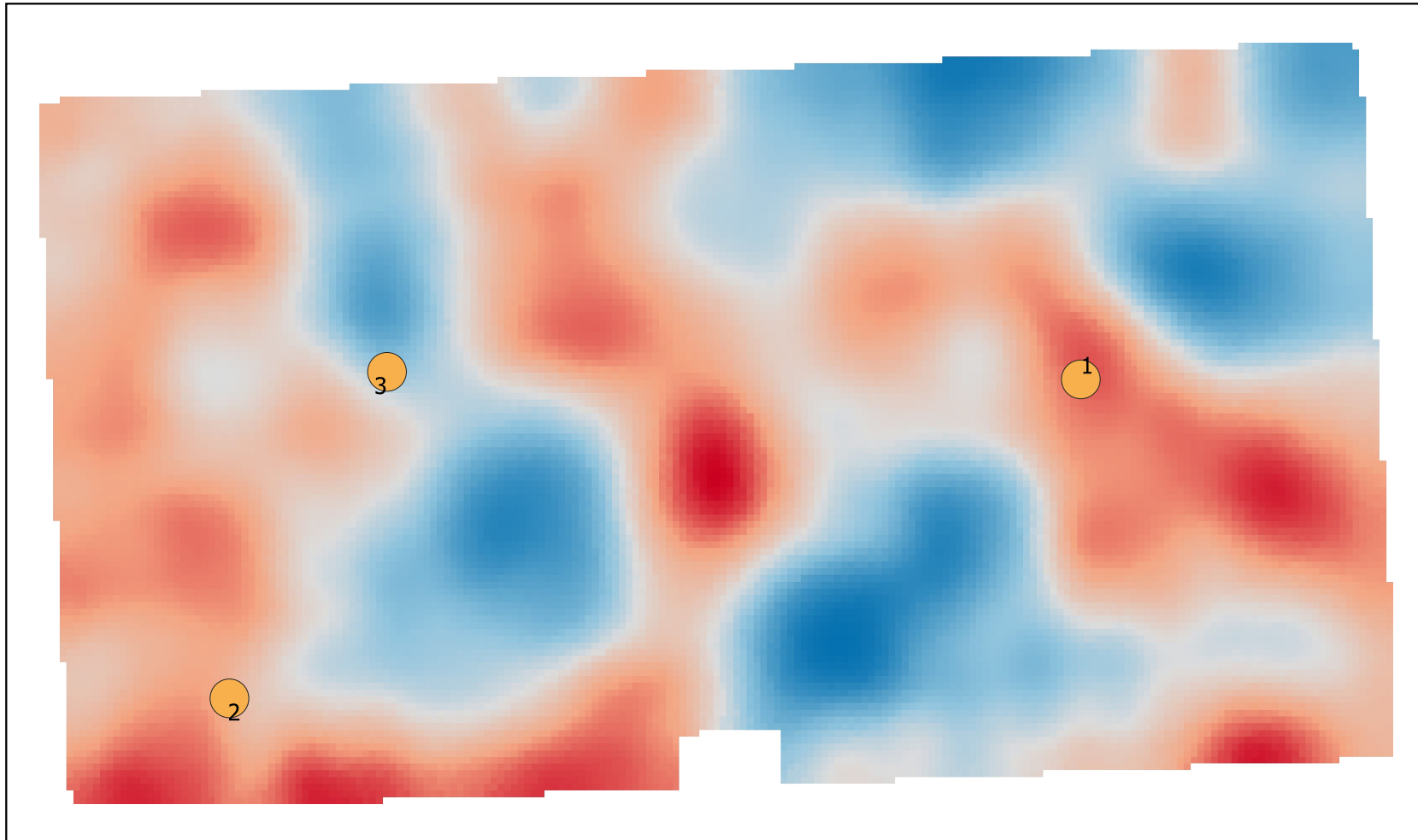


ID	Leak
1	NAN
2	NAN
3	NAN

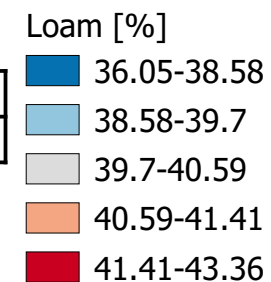


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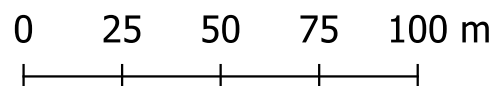
Chiawana:Loam



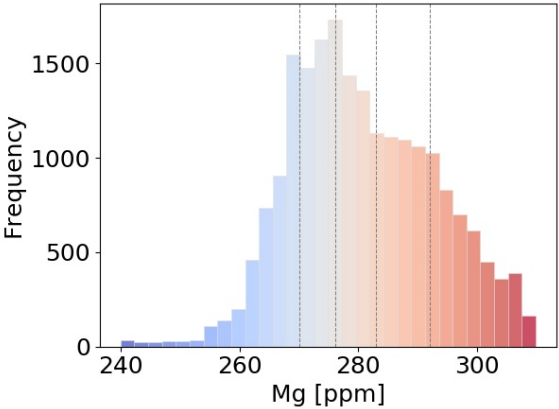
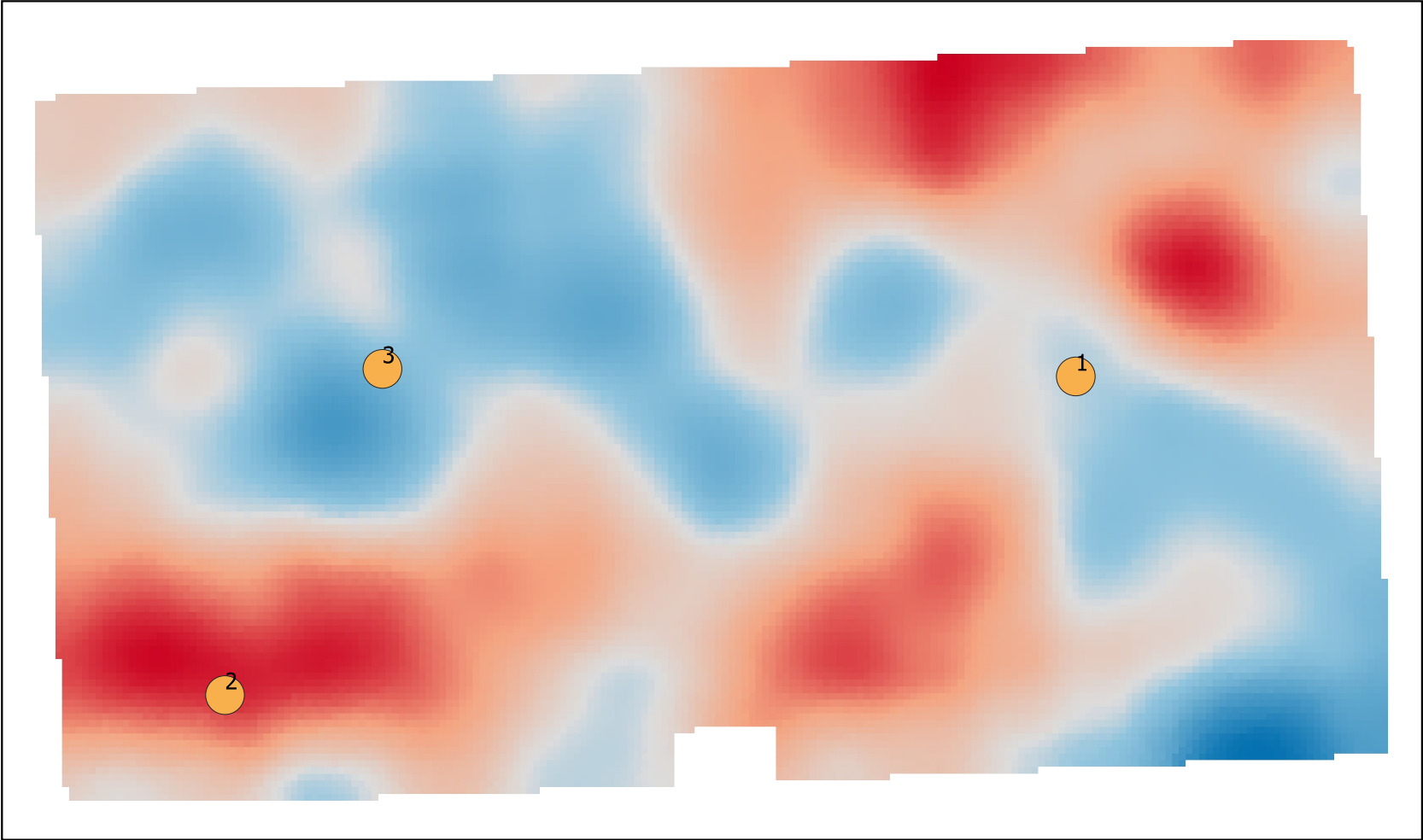
Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	39.99	3



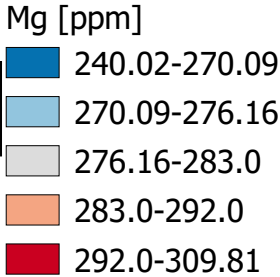
ID	Loam
1	NAN
2	NAN
3	NAN



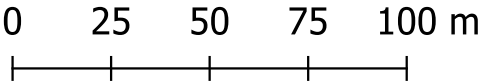
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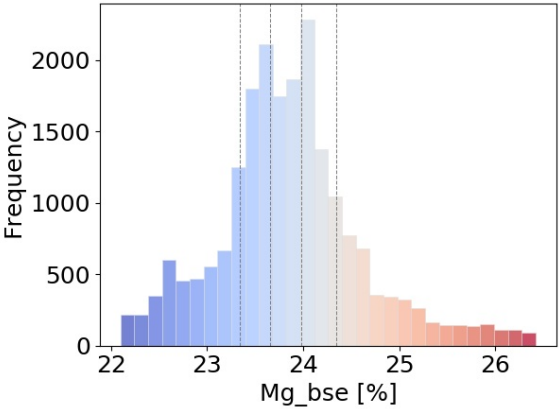
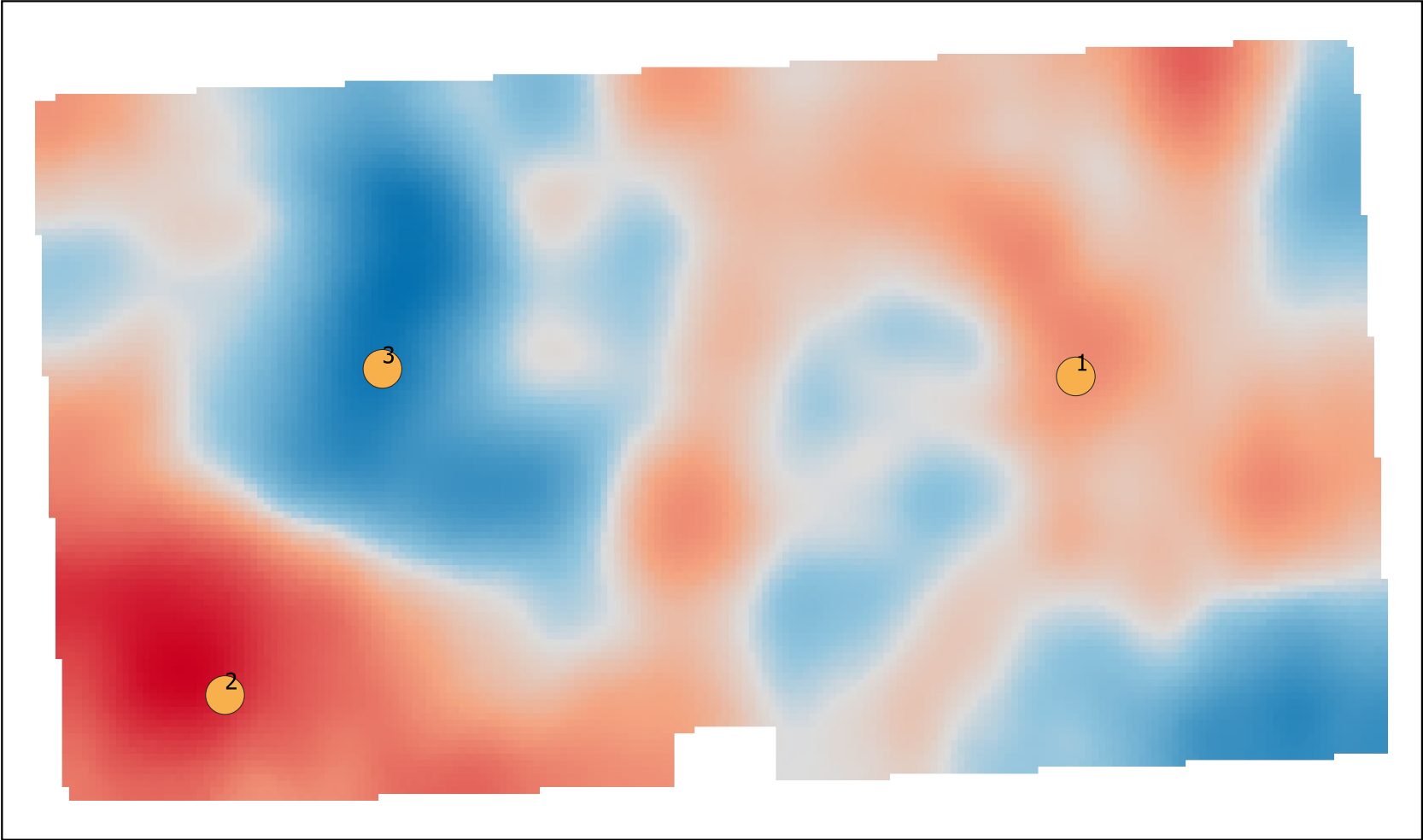
Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	280.74	4



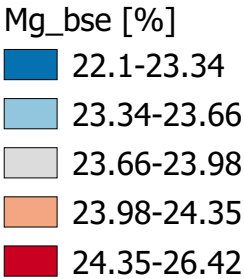
ID	Mg
1	252.0
2	324.0
3	312.0



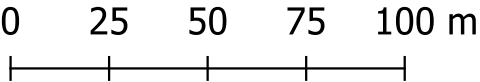
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Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	23.86	3

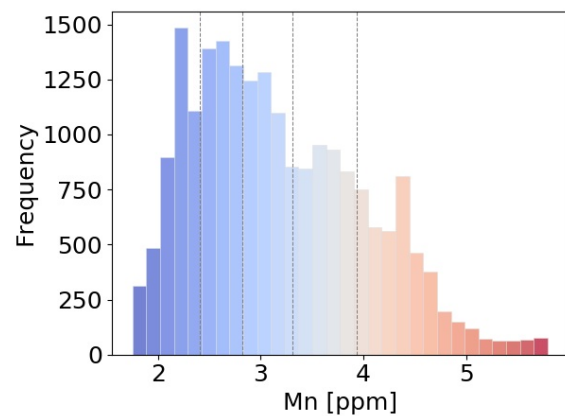
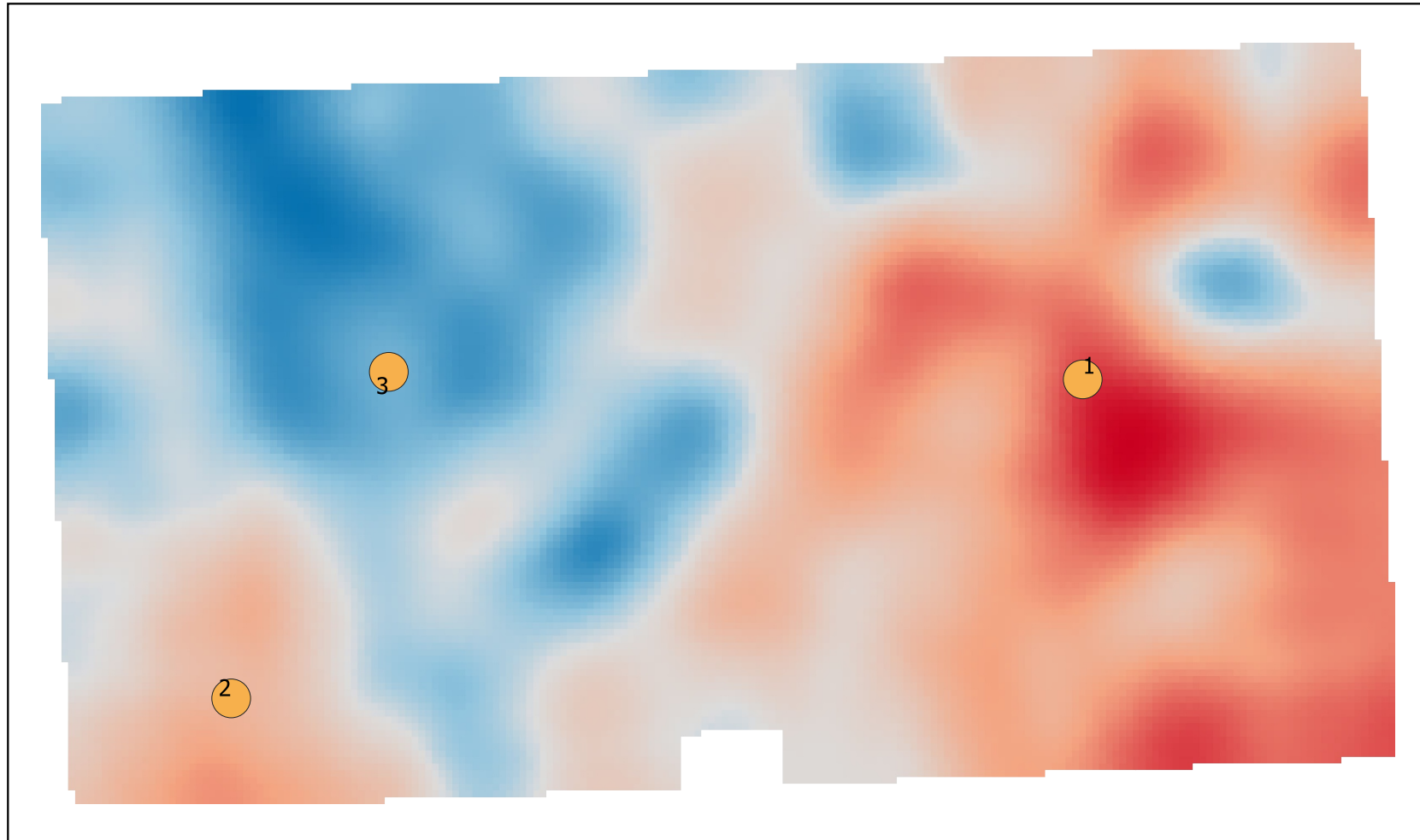


ID	Mg_bse
1	NAN
2	NAN
3	NAN

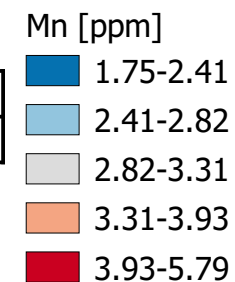


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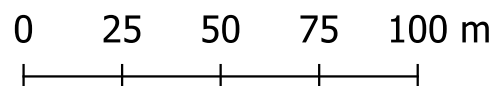
Chiawana:Mn



Client	Block	Crop	Scan Date	Acres	Mean	CV
Columbia Reach	661	Apples	4/27/21	20.57	3.18	26



ID	Mn
1	6.0
2	4.1
3	1.5



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