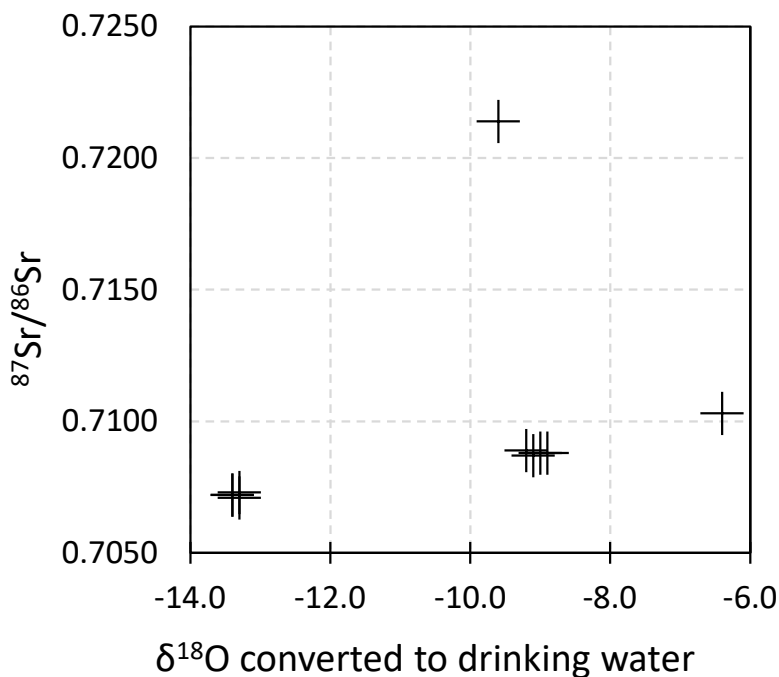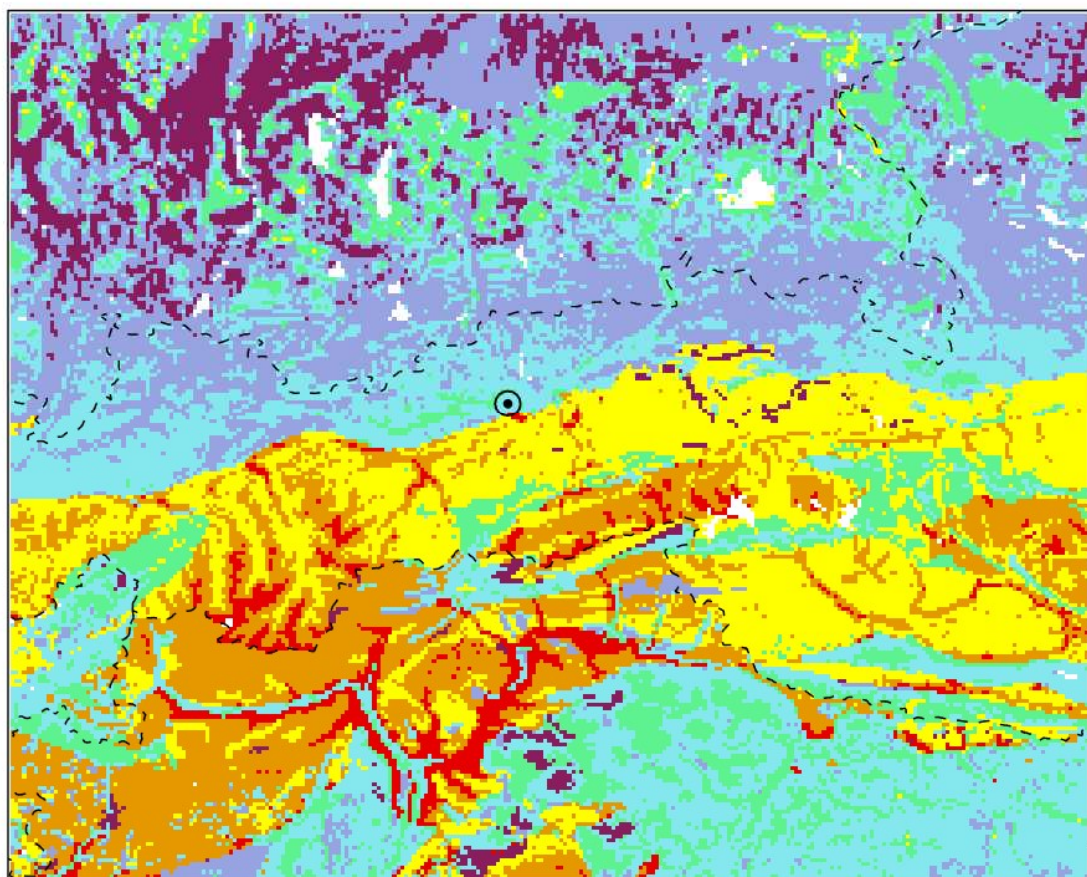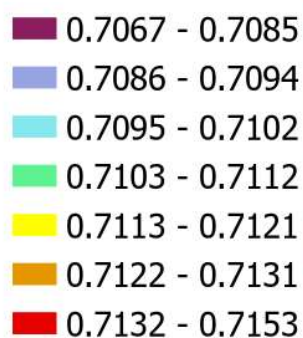# Interpreting data using an isoscape

- You have $^{87}Sr/^{86}Sr$ and $\delta^{18}O$ data from 10 tooth enamel samples from a cemetery.
- Samples split into two groups (A and B), with two outliers (C and D).
- All teeth sampled were M3.
- The site is located above a river at the edge of a mountain range.
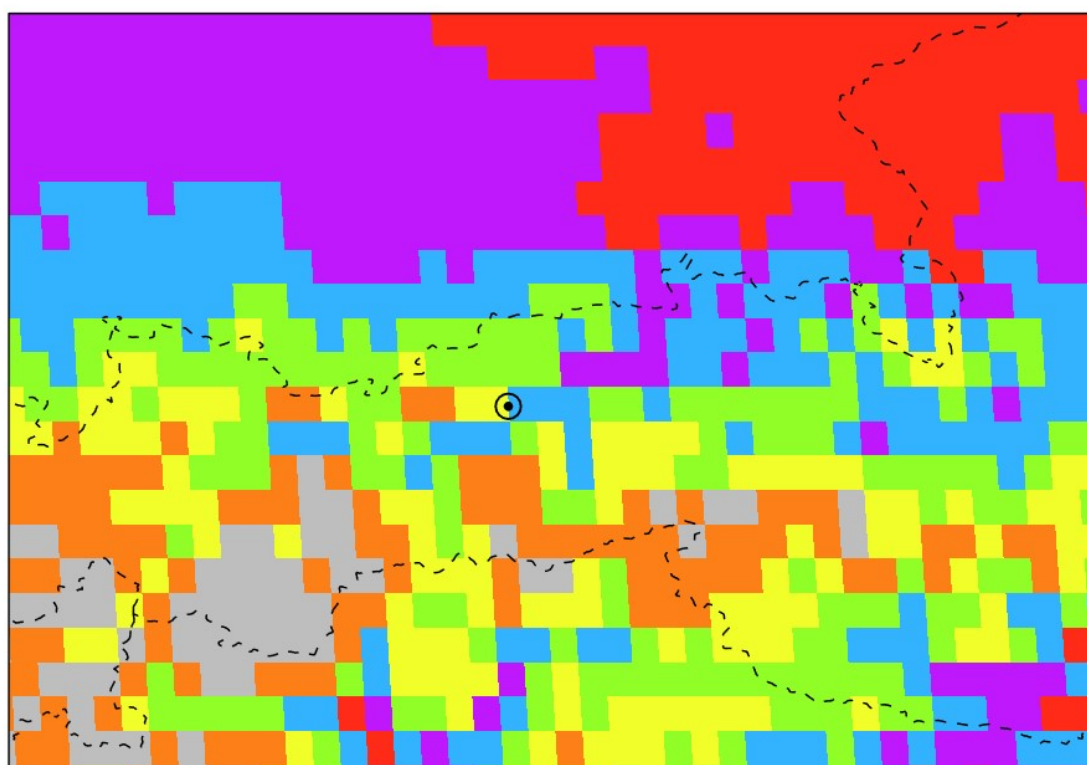- There is evidence of a settlement next to the site.

	$^{87}Sr/^{86}Sr$	$\delta^{18}O$ (‰)	Group
Ind 1	0.7071	-13.3	A
Ind 2	0.7072	-13.4	A
Ind 3	0.7073	-13.3	A
Ind 4	0.7072	-13.4	A
Ind 5	0.7087	-9.1	B
Ind 6	0.7088	-8.9	B
Ind 7	0.7089	-9.2	B
Ind 8	0.7088	-9.0	B
Ind 9	0.7214	-9.6	C
Ind 10	0.7103	-6.4	D

$\delta^{18}O$ converted to drinking water

Modelled bioavailable $^{87}Sr/^{86}Sr$ values for the global land surface based on measured rock, soil, plant, water, animal and human data (Bataille et al., 2020)

	0.7067 - 0.7085
	0.7086 - 0.7094
	0.7095 - 0.7102
	0.7103 - 0.7112
	0.7113 - 0.7121
	0.7122 - 0.7131
	0.7132 - 0.7153

Site prediction is 0.7099

Annual mean $\delta^{18}O$ for modern rainwater (WaterIsotopes.org)

	-14.4 to -13.2
	-13.1 to -12.4
	-12.3 to -11.6
	-11.5 to -10.8
	-10.7 to -10.1
	-10 to -9.4
	-9.3 to -7.6

Site