

Spatial assignment of test sample

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Input

Website Identifier: 101-L

Isotope values of test sample

Table 1: Isotope values of test sample

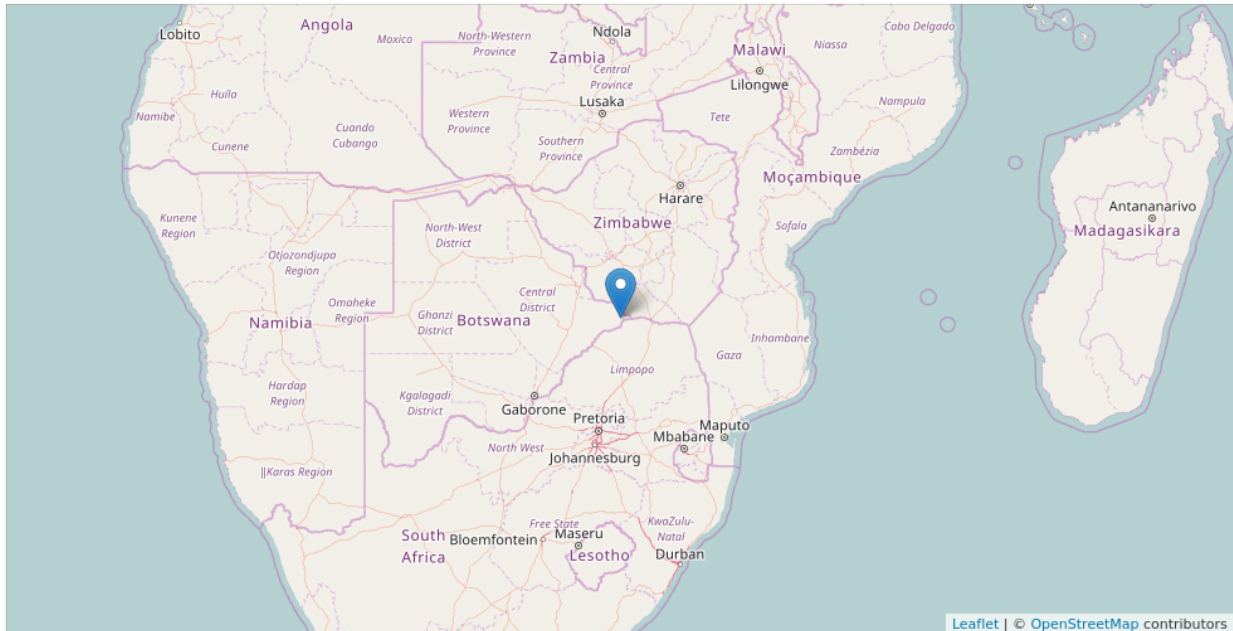
13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
-18.3	13.3	19.7	-16.1	7.1

Output

Model

```
##
## Call:
## train.kknn(formula = fmla, data = ivory.train, kmax = 15, distance = 2, kernel = knl)
##
## Type of response variable: nominal
## Minimal misclassification: 0.3765867
## Best kernel: triangular
## Best k: 15
Classifier: country_code
```

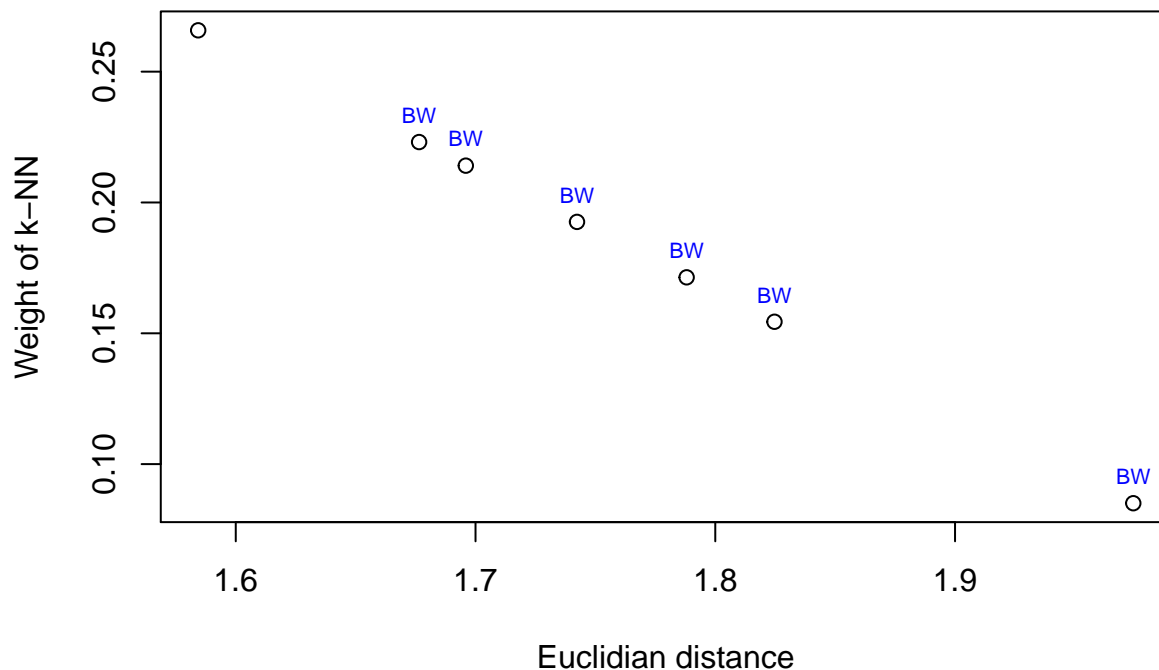
Map of best fitted reference sample



Best fitted reference sample:

- Site: Botswana, Mathathane area
- Country: BW
- Region: Southern Africa
- CITES: Appendix II
- Lat: -22.2
- Lon: 28.91

Assignment of test sample to nearest neighbours



Best fitted reference entries

Table 2: Details of best fitted reference entry (row 1) and other fitted entries within best classifier

lon	lat	location	13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
28.91	-22.2	Botswana, Mathathane area	-18.6	11.8	18.4	-16.4	11.3
28.91	-22.2	Botswana, Mathathane area	-16.5	11.6	19.1	-15.0	10.7
28.91	-22.2	Botswana, Mathathane area	-18.0	12.2	17.5	-8.2	10.2
28.91	-22.2	Botswana, Mathathane area	-18.5	11.0	19.4	-25.9	10.2
28.91	-22.2	Botswana, Mathathane area	-18.9	10.8	18.5	-21.8	10.3
28.91	-22.2	Botswana, Mathathane area	-16.8	11.4	19.3	-22.3	11.2
28.91	-22.2	Botswana, Mathathane area	-19.9	11.6	18.9	-27.9	10.7

Country of prediction: BW

Testing robustness of assignment: Wilcoxon signed rank test

If $p\text{-value} > 0.05$, the test concludes that the isotope signature of the test sample is similar to the respective nearest neighbour reference sample.

P-values for the k nearest neighbours in Wilcoxon Test

“1.000000, 0.036742, 0.000516, 0.000068, 0.000013, 0.000005, 0.000005”

Goodness of fit of test sample:

- good fit: if $p > 0.05$ for at least two tested nearest neighbour reference samples;
- moderate fit: if $p > 0.05$ for at least one tested nearest neighbour reference samples;
- uncertain: if $p > 0.05$ for none of the tested nearest neighbour reference samples.

Assumption: At least two nearest reference samples are available.

Overall goodness of fit of test sample: “**moderate fit**”