

Spatial assignment of test sample

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Input

Website Identifier: 25

Isotope values of test sample

Table 1: Isotope values of test sample

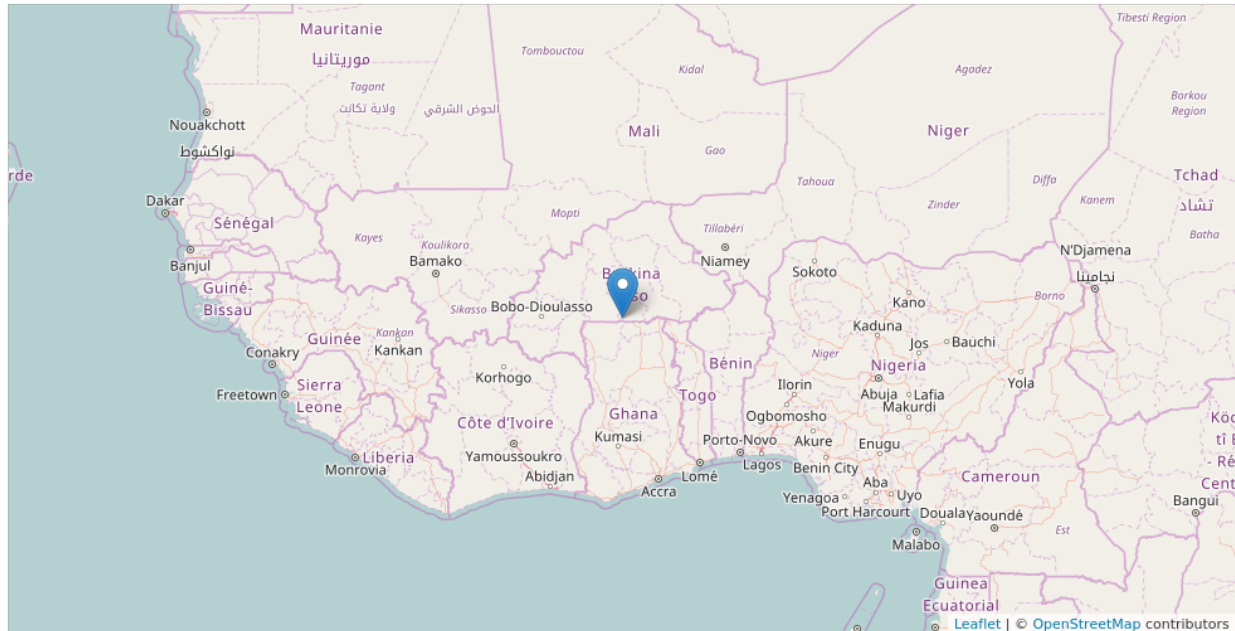
13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
-23.7	6.2	19.7	-32.4	10

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
```

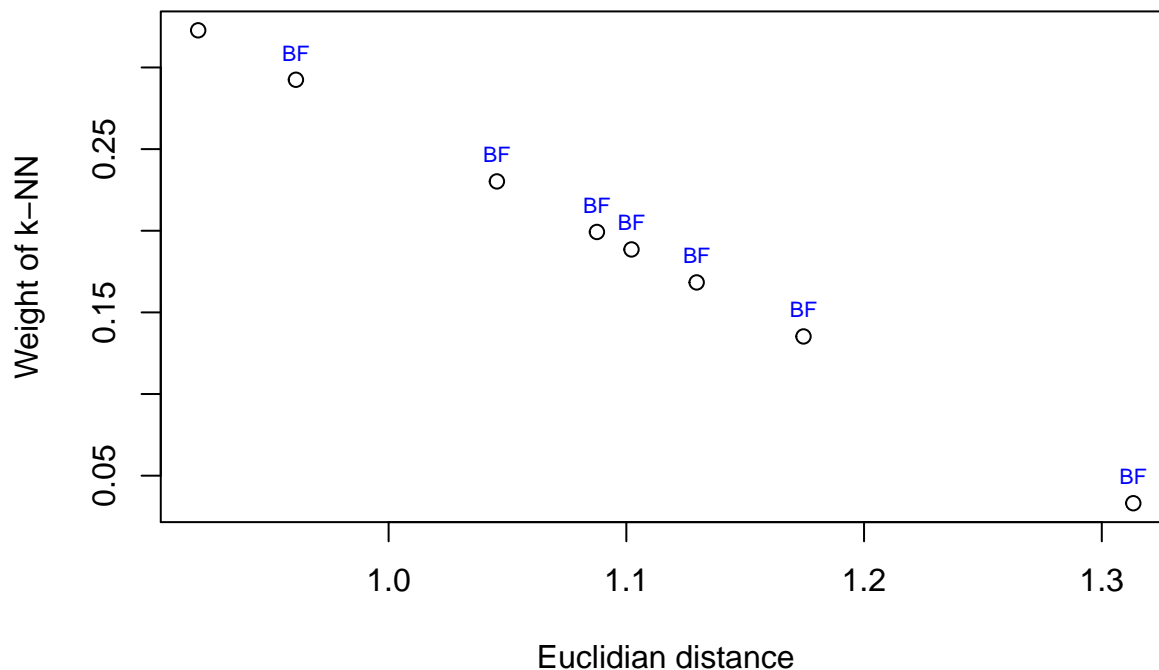
Map of best fitted reference sample



Best fitted reference sample:

- Site: Burkina Faso, Ranch de Nazinga
- Country: BF
- Region: West Africa
- CITES: Appendix I
- Lat: 11.083333
- Lon: -1.483333

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
-1.48	11.08	Burkina Faso, Ranch de Nazinga	-22.3	5.3	19.2	-34.7	10.2
-1.48	11.08	Burkina Faso, Ranch de Nazinga	-22.7	5.1	20.3	-37.6	10.5
0.92	11.28	Burkina Faso, Reserve partielle de Faune	-22.7	5.6	20.6	-40.2	9.8
-1.48	11.08	Burkina Faso, Ranch de Nazinga	-22.7	5.3	21.0	-38.2	10.0
0.92	11.28	Burkina Faso, Reserve partielle de Faune	-23.2	5.8	20.9	-41.7	9.9
-1.48	11.08	Burkina Faso, Ranch de Nazinga	-22.9	5.5	18.4	-40.3	10.5
-1.48	11.08	Burkina Faso, Ranch de Nazinga	-22.3	5.6	19.2	-41.3	10.3
0.92	11.28	Burkina Faso, Reserve partielle de Faune	-22.4	5.8	18.3	-40.4	11.5

Country of prediction: BF

Testing robustness of assignment: Wilcoxon signed rank test

If p-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

“0.0002757, 0.0001407, 0.0000682, 0.0000682, 0.0000096, 0.0000036, 0.0000012, 0.0000001”

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: “**uncertain**”