

Spatial assignment of test sample

December 10, 2016

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Input

Website Identifier: 28

Isotope values of test sample

Table 1: Isotope values of test sample

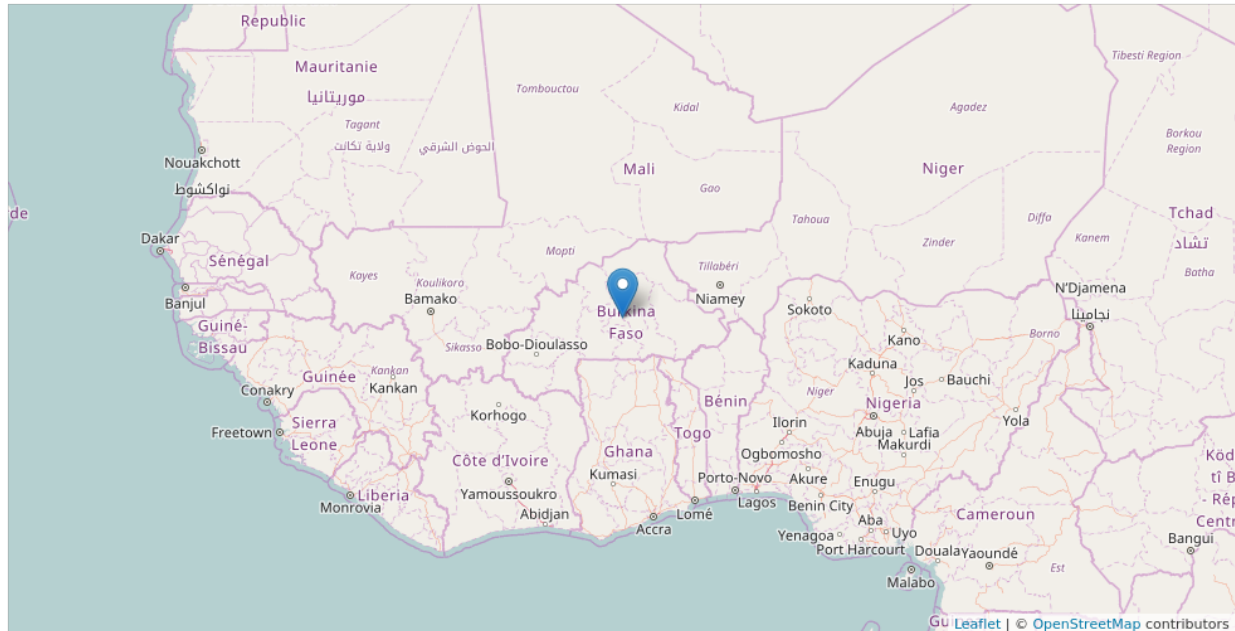
13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
-21.7	4.9	18.8	-43.1	5.9

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
```

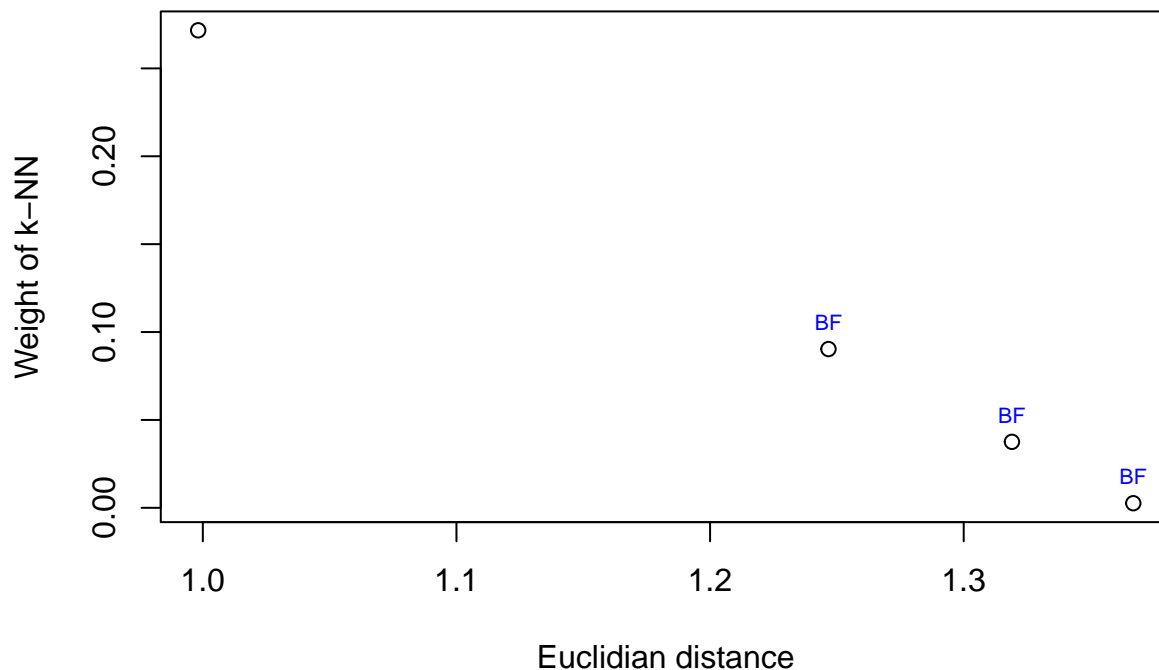
Map of best fitted reference sample



Best fitted reference sample:

- Site: Burkina Faso, Yeryanga Safari Concession
- Country: BF
- Region: West Africa
- CITES: Appendix I
- Lat: 12.4
- Lon: -1.33

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
-1.33	12.40	Burkina Faso, Yeryanga Safari Concession	-21.1	5.6	18.4	-49.2	8.1
-1.48	11.08	Burkina Faso, Ranch de Nazinga	-22.1	5.1	18.4	-41.1	10.0
-1.33	12.40	Burkina Faso, Yeryanga Safari Concession	-21.8	6.2	17.0	-49.8	7.1
-1.48	11.08	Burkina Faso, Ranch de Nazinga	-21.4	5.7	18.1	-45.8	10.1

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

“0.000000103, 0.000000026, 0.000000026, 0.000000026”

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**”