

Spatial assignment of test sample

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Input

Website Identifier: 123-C

Isotope values of test sample

Table 1: Isotope values of test sample

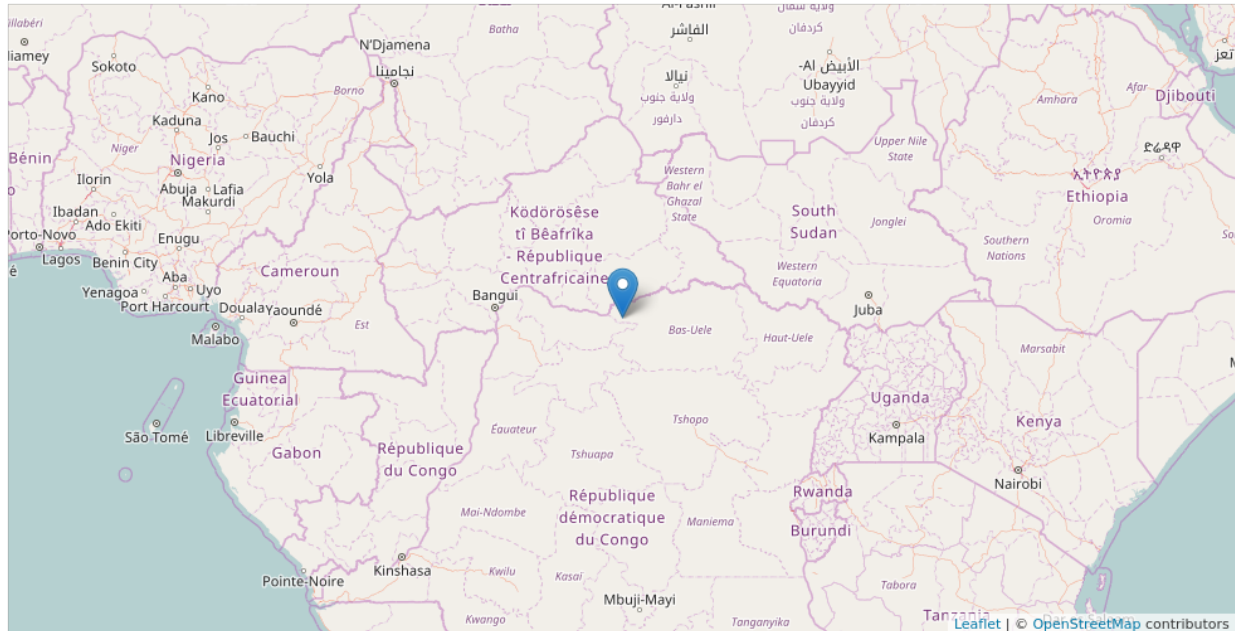
13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
-21.4	8.4	18.4	-32.6	8.7

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
```

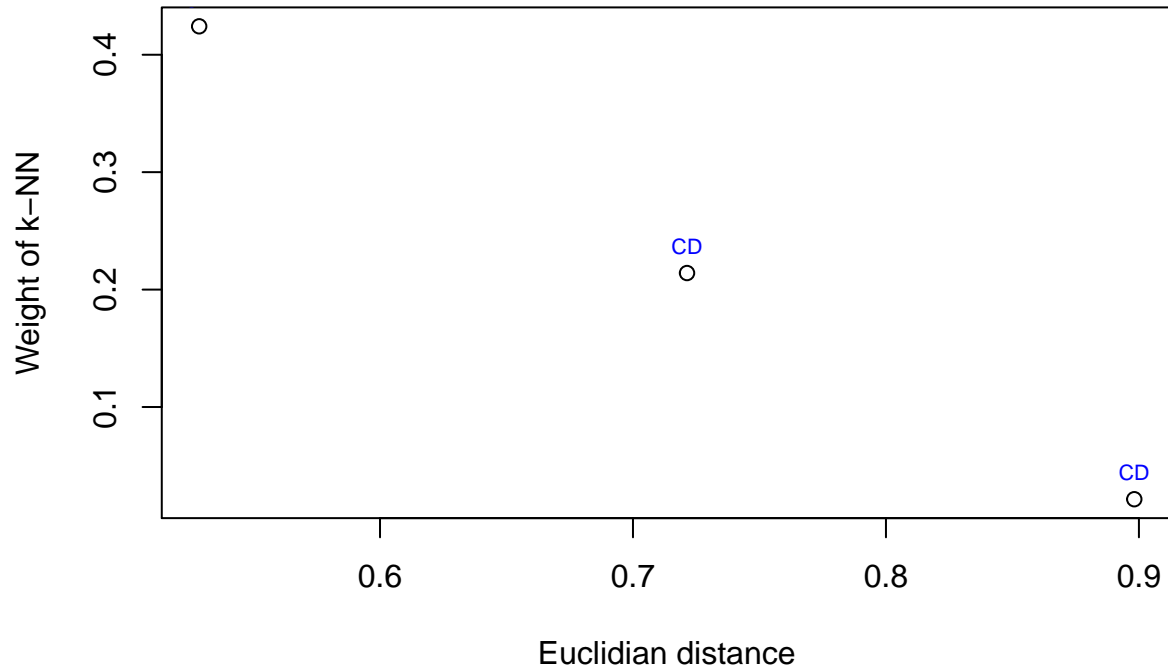
Map of best fitted reference sample



Best fitted reference sample:

- Site: Dem. Rep. Congo, Bas Uele
- Country: CD
- Region: Central Africa
- CITES: Appendix I
- Lat: 4
- Lon: 23

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
23.00	4.00	Dem. Rep. Congo, Bas Uele	-20.8	7.9	18.0	-35.6	8.8
29.31	3.45	Dem. Rep. Congo, Dungu	-20.5	7.9	18.3	-37.8	8.7
29.09	3.40	Dem. Rep. Congo, Gangara na Bodio	-22.1	8.0	18.3	-36.0	6.2

Country of prediction: CD

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

“0.50454, 0.37659, 0.00052”

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: “**good fit**”