

Spatial assignment of test sample

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Input

Website Identifier:

Isotope values of test sample

Table 1: Isotope values of test sample

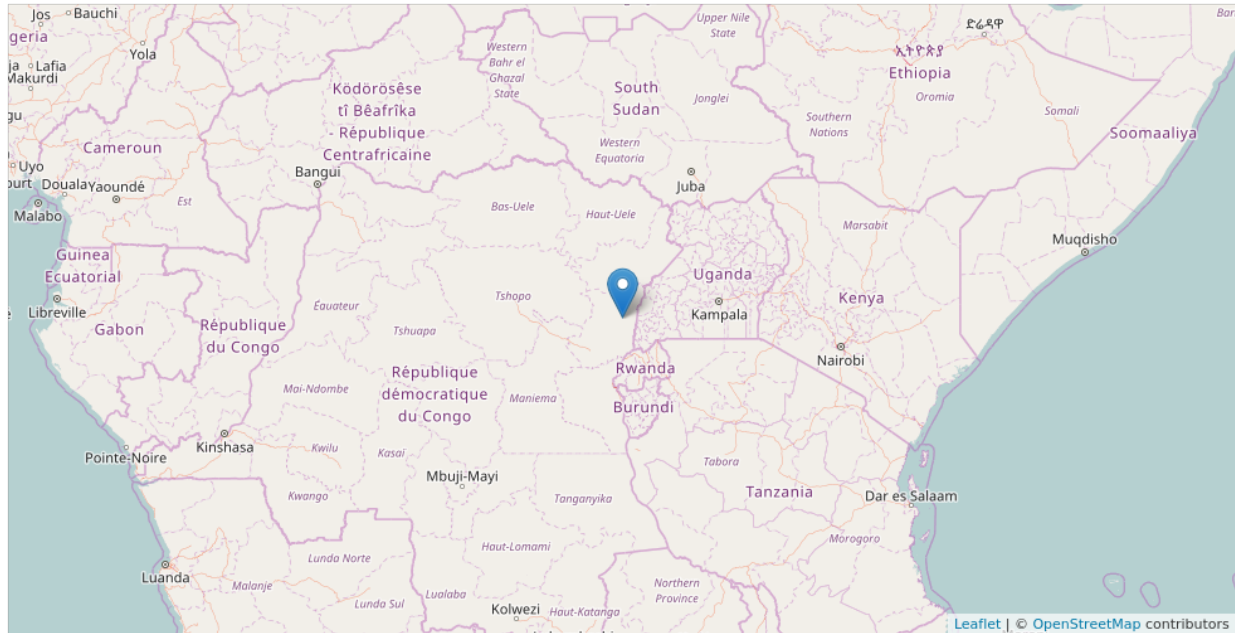
13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
-19.8	12.5	22	-27.6	2.8

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
```

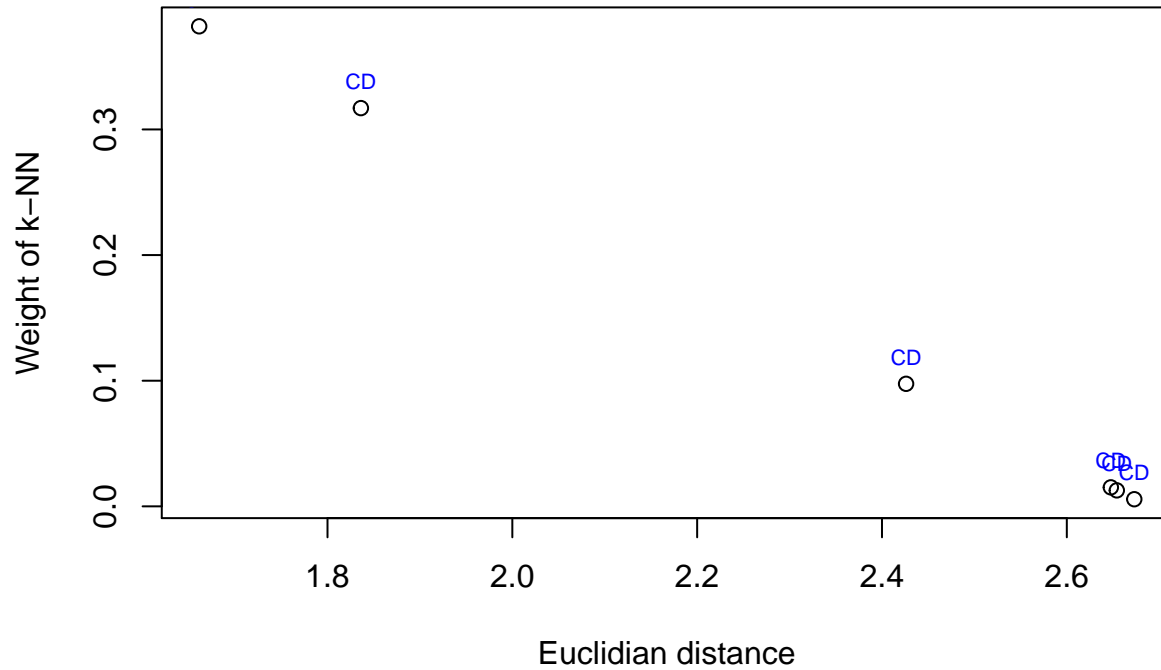
Map of best fitted reference sample



Best fitted reference sample:

- Site: Dem. Rep. Congo, Albertpark
- Country: CD
- Region: Central Africa
- CITES: Appendix I
- Lat: -0.3
- Lon: 29.2

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
29.20	-0.30	Dem. Rep. Congo, Albertpark	-18.5	11.2	19.3	-29.6	3.6
28.80	-2.24	Dem. Rep. Congo, Kivu	-18.8	9.8	20.2	-20.6	3.3
29.29	0.29	Dem. Rep. Congo, Beni terr	-19.6	8.9	19.0	-21.4	3.4
29.18	-0.35	Dem. Rep. Congo, Kanyatsi	-17.7	16.3	19.7	-17.8	2.6
29.21	-1.20	Dem. Rep. Congo, Rumangabo	-18.6	12.7	17.0	-20.1	3.5
29.21	-1.20	Dem. Rep. Congo, Rumangabo	-18.2	8.4	19.2	-25.1	4.3

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

“0.002675546, 0.000177079, 0.000013100, 0.000001728, 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**”