

Spatial assignment of test sample

December 14, 2016

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Input

Website Identifier: 156

Isotope values of test sample

Table 1: Isotope values of test sample

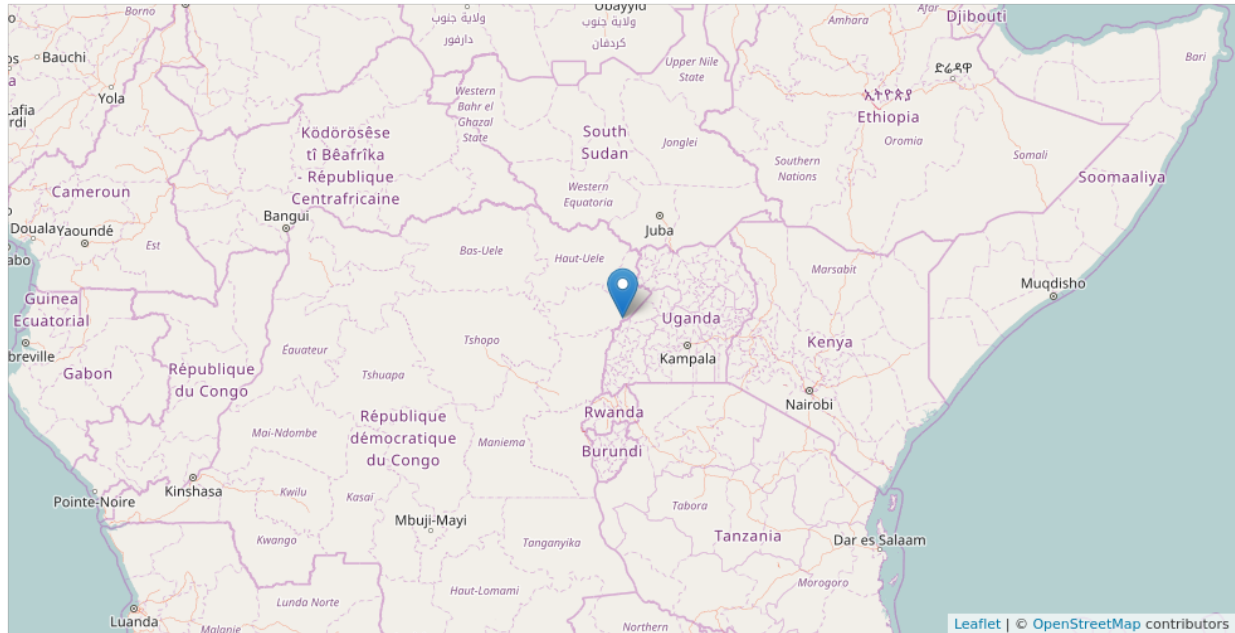
13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
-20.4	9.5	14.9	-38	4.5

Output

Model

```
##
## Call:
## train.kknn(formula = fmla, data = ivory.train, kmax = 15, distance = 2, kernel = knl)
##
## Type of response variable: nominal
## Minimal misclassification: 0.1889986
## Best kernel: triangular
## Best k: 14
Classifier: region
```

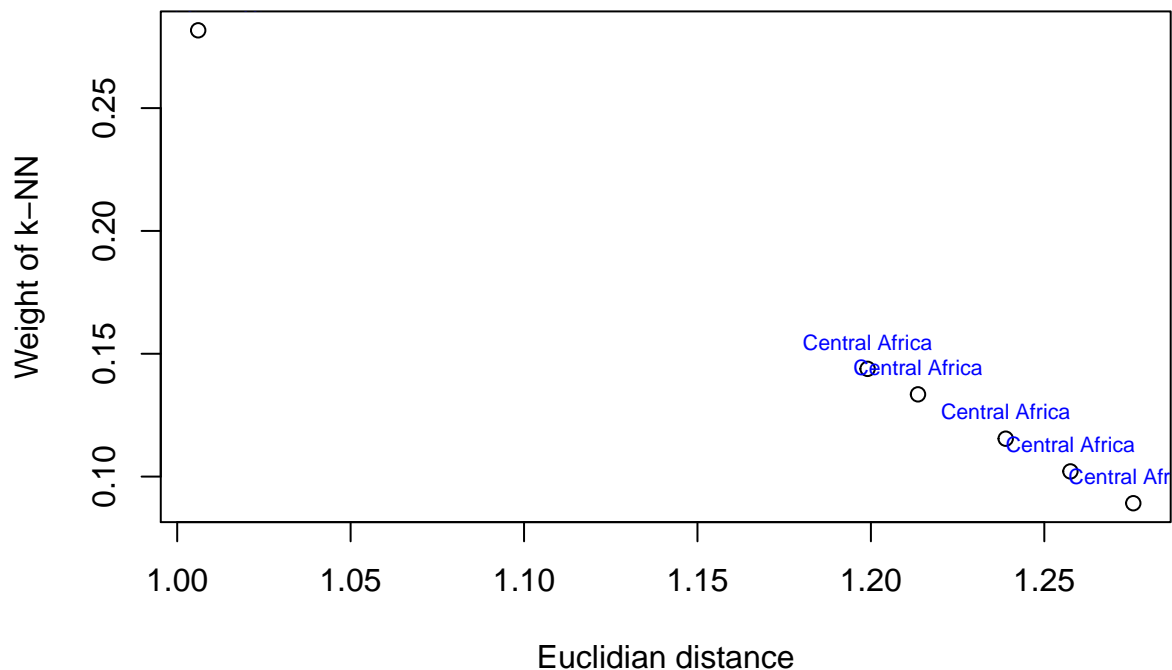
Map of best fitted reference sample



Best fitted reference sample:

- Site: Dem. Rep. Congo, Kasenyi
- Country: CD
- Region: Central Africa
- CITES: Appendix I
- Lat: 1.23
- Lon: 30.26

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
30.26	1.23	Dem. Rep. Congo, Kasenyi	-19.6	9.2	16.0	-30.5	3.9
18.00	4.00	Central African Republic	-21.8	8.4	15.8	-43.2	3.1
27.43	-4.42	Dem. Rep. Congo, Kabambare	-21.9	8.1	16.1	-37.2	4.8
27.43	-4.42	Dem. Rep. Congo, Kabambare	-22.0	8.7	16.5	-38.2	3.7
13.00	0.00	Gabon	-20.7	9.1	17.0	-33.3	6.2
29.77	-2.00	Rwanda	-21.2	8.2	16.1	-46.5	5.2

Region of prediction: Central Africa

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

“0.2799540, 0.0002010, 0.0001552, 0.0000004, 0.0000001, 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: “**moderate fit**”