Spatial assignment of test sample

November 24, 2016

Contents

Input

Website Identifier: Blind 19_MW

Isotope values of test sample

Table 1: Isotope values of test sample

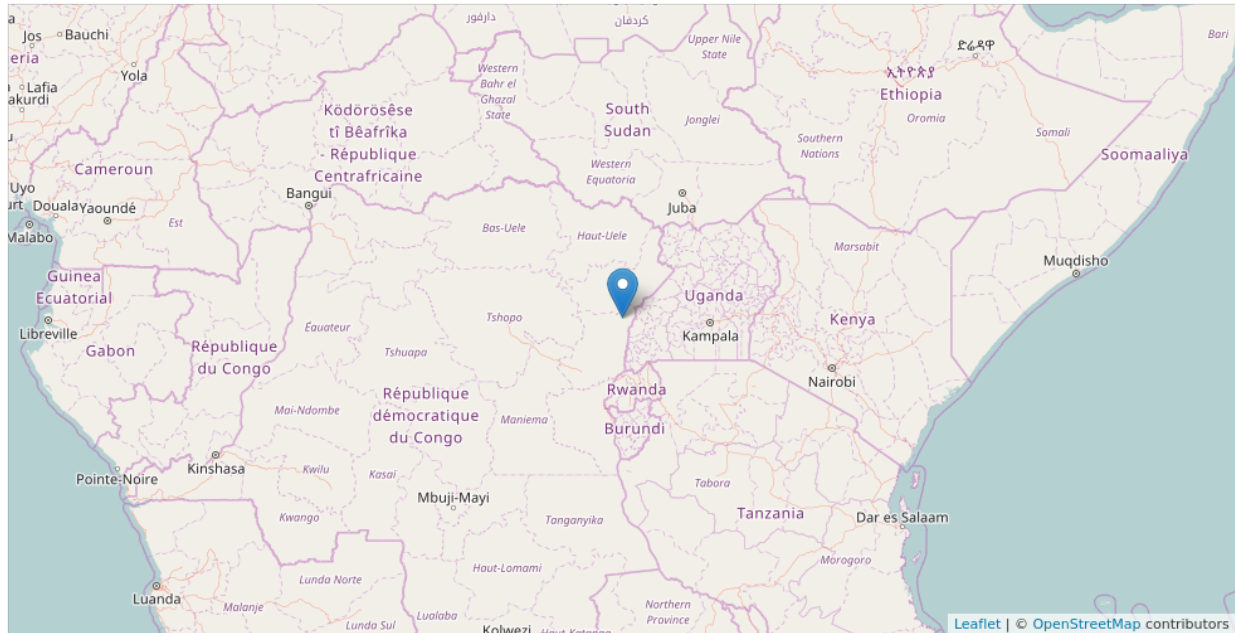| 13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
-18.1	7.8	18.3	-32.6	7.8

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
```

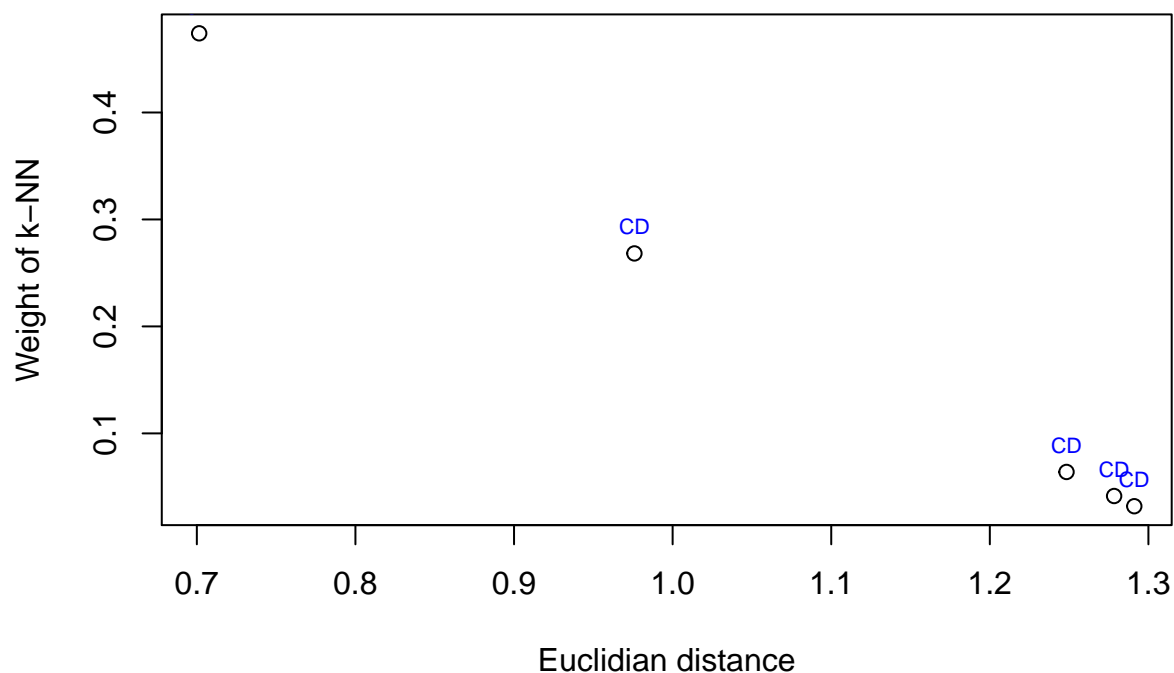Classifier: **country_code**

Map of best fitted reference sample

Best fitted reference sample:

- Site: Dem. Rep. Congo, Beni
- Country: CD
- Region: Central Africa
- CITES: Appendix I
- Lat: 0.45
- Lon: 29.5

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
29.50	0.45	Dem. Rep. Congo, Beni	-18.2	8.6	17.4	-34.3	6.7
29.09	3.40	Dem. Rep. Congo, Gangala na Bodio	-19.7	8.2	17.5	-29.9	7.7
29.12	3.71	Dem. Rep. Congo, Gangala	-20.1	7.5	17.0	-33.0	7.1
19.52	4.14	Dem. Rep. Congo, Bosobolo	-20.0	7.9	17.5	-38.8	6.4
29.21	-1.20	Dem. Rep. Congo, Rumangabo	-18.6	8.5	17.7	-34.4	3.8

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

"0.1717893, 0.1023086, 0.0000310, 0.0000050, 0.0000012"

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**"