Spatial assignment of test sample

December 10, 2016

Contents

Input

Website Identifier: 39

Isotope values of test sample

Table 1: Isotope values of test sample

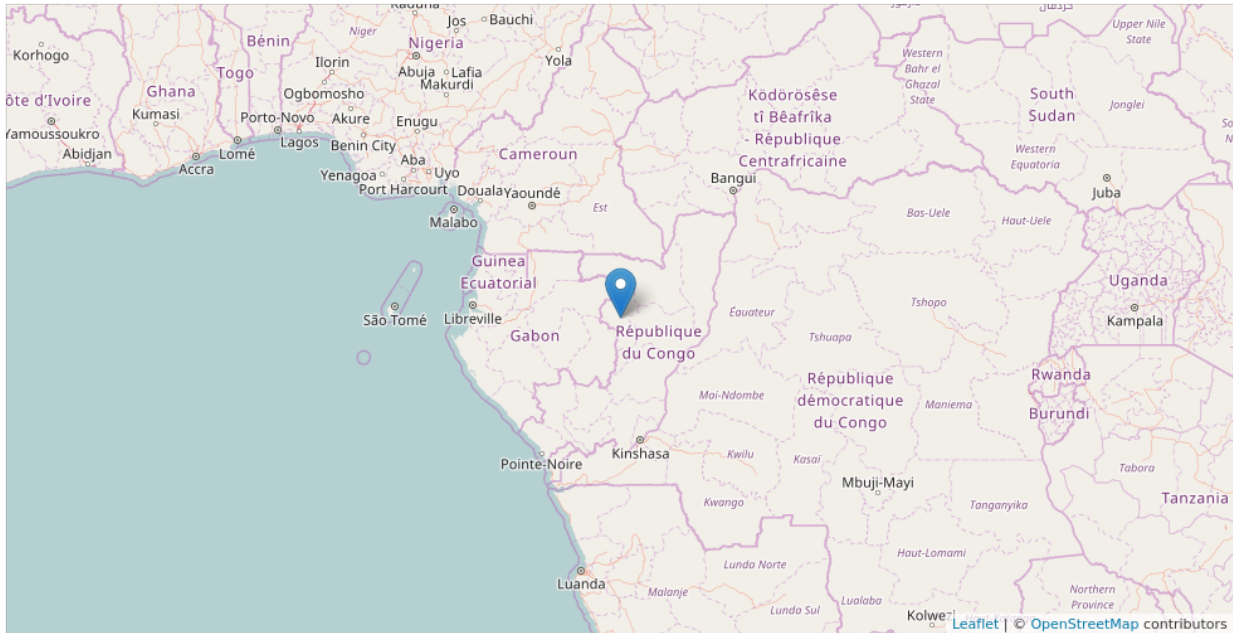| 13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
-24.7	9.2	18	-45.1	11.8

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
```
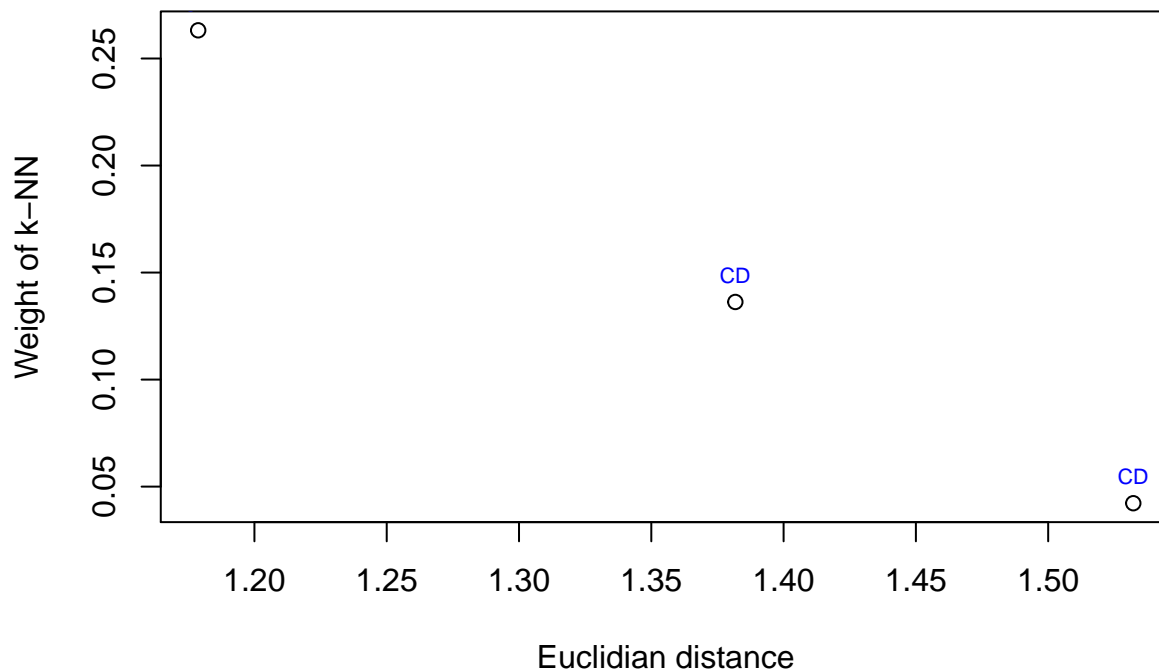
Classifier: **country_code**

Map of best fitted reference sample

Best fitted reference sample:
- Site: Dem. Rep. Congo
- Country: CD
- Region: Central Africa
- CITES: Appendix I
- Lat: -0.082275
- Lon: 14.573353

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
14.57	-0.08	Dem. Rep. Congo	-24.9	10.3	16.4	-49.5	10.0
14.47	-0.01	Dem. Rep. Congo	-25.0	10.2	15.8	-49.9	10.1
17.31	-6.32	Dem. Rep. Congo, Kwango	-23.6	7.8	16.5	-47.4	8.5

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

"0.00092529, 0.00017708, 0.00000018"

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**"