Spatial assignment of test sample

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Contents

Input

Website Identifier: 005p562-40

Isotope values of test sample

Table 1: Isotope values of test sample

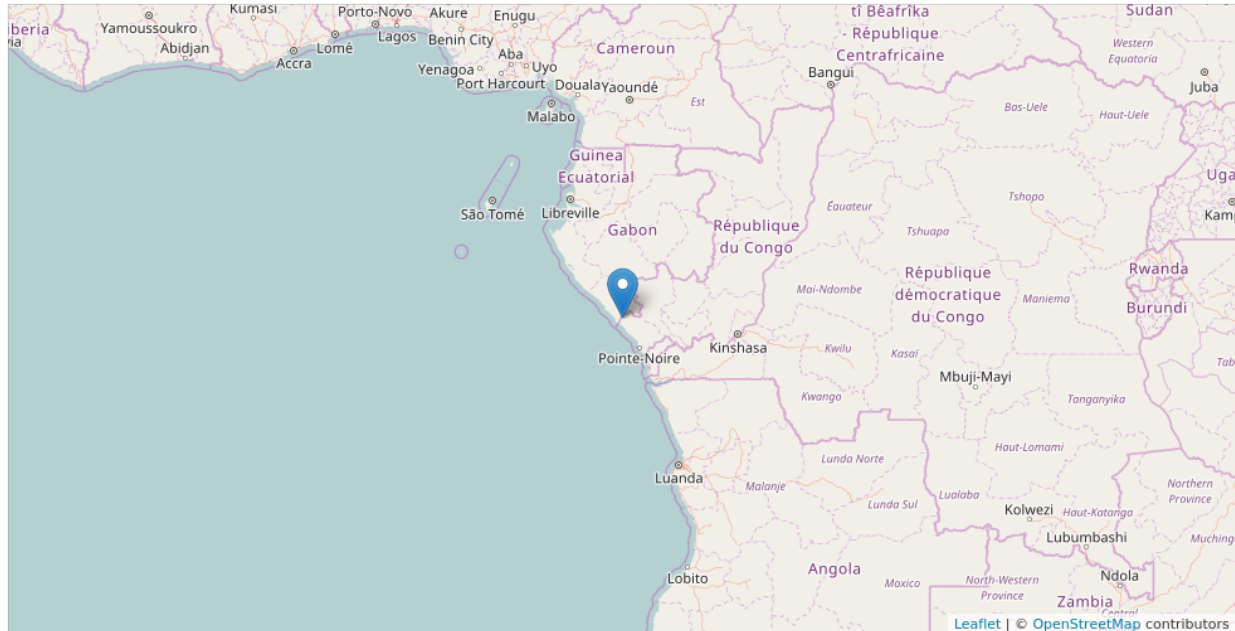| 13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
-25.1	11	15.3	-53.3	13.4

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**

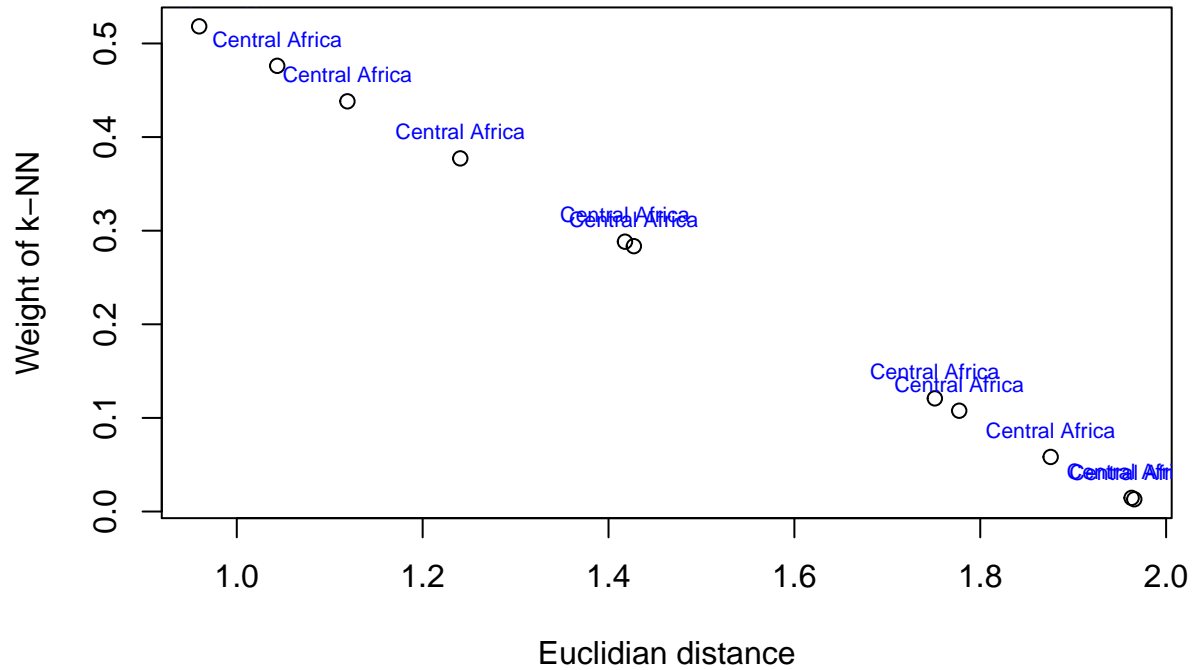# Map of best fitted reference sample

Best fitted reference sample:

- Site: Congo, Shot in Southern Congo, on the Atlantic shore very near the border with Gabon
- Country: CG
- Region: Central Africa
- CITES: Appendix I
- Lat: -3.78
- Lon: 11.27

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
11.27	-3.78	Congo, Shot in Southern Congo, on the At	-24.7	11.6	15.8	-48.1	11.0
11.15	2.86	Cameroon, near Ebolowa	-25.0	11.7	15.0	-52.0	10.1
14.47	-0.01	Dem. Rep. Congo	-25.0	10.2	15.8	-49.9	10.1
14.57	-0.08	Dem. Rep. Congo	-24.9	10.3	16.4	-49.5	10.0
11.64	-4.13	Congo, Shot in Southern Congo, 50km from	-25.0	8.5	14.7	-49.4	11.9
12.76	-1.18	Gabon	-26.6	10.0	15.0	-56.9	9.9
17.11	-1.10	Dem. Rep. Congo, Lukolela	-24.8	10.5	15.4	-43.4	8.4
12.76	-1.18	Gabon	-26.6	10.4	14.9	-57.1	8.2
12.79	-3.01	Congo, Litsandou village, 8km southeast	-23.5	10.2	13.3	-64.6	10.8
20.96	-1.44	Congo	-23.7	9.2	13.6	-62.2	9.8
16.20	-3.40	Dem. Rep. Congo, Tua	-22.8	10.2	14.8	-42.0	9.8

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

"0.375386, 0.076271, 0.076271, 0.060940, 0.048173, 0.037660, 0.019325, 0.003954, 0.003303, 0.002275, 0.000019"

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**"