

Spatial assignment of test sample

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Input

Website Identifier: 031-B

Isotope values of test sample

Table 1: Isotope values of test sample

13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
-22.7	7.5	19.2	-31.8	11.5

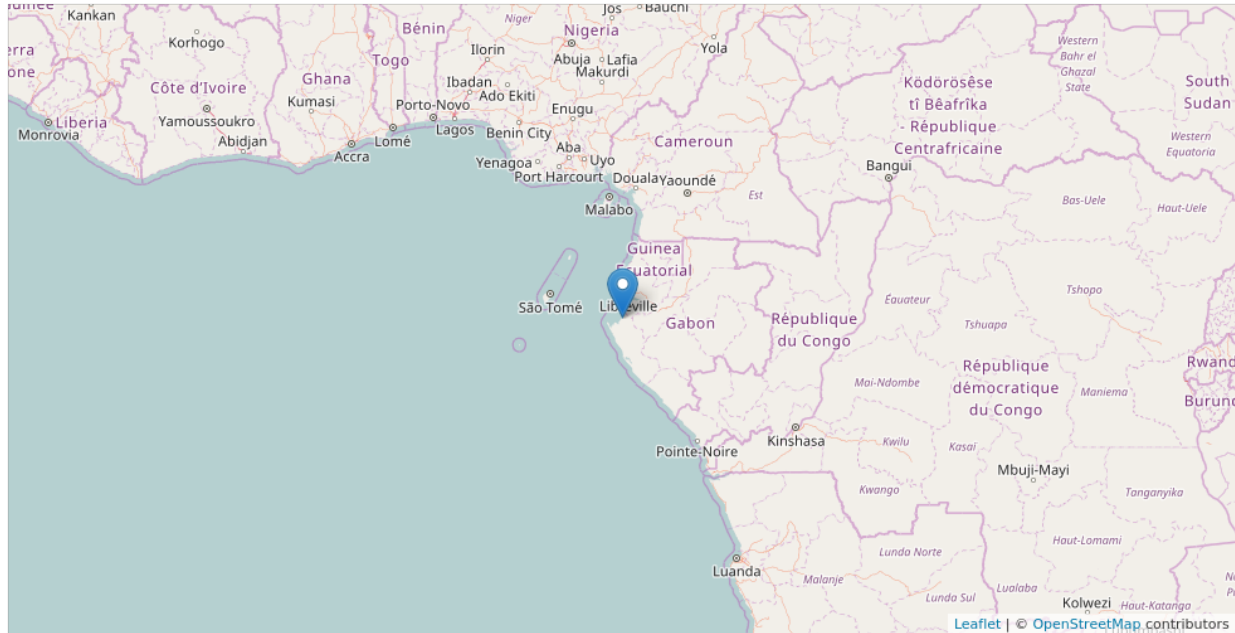
Output

Model

```
##  
## Call:  
## train.kknn(formula = fmla, data = ivory.train, kmax = 15, distance = 2, kernel = knl)  
##  
## Type of response variable: nominal  
## Minimal misclassification: 0.3765867  
## Best kernel: triangular  
## Best k: 15
```

Classifier: **country_code**

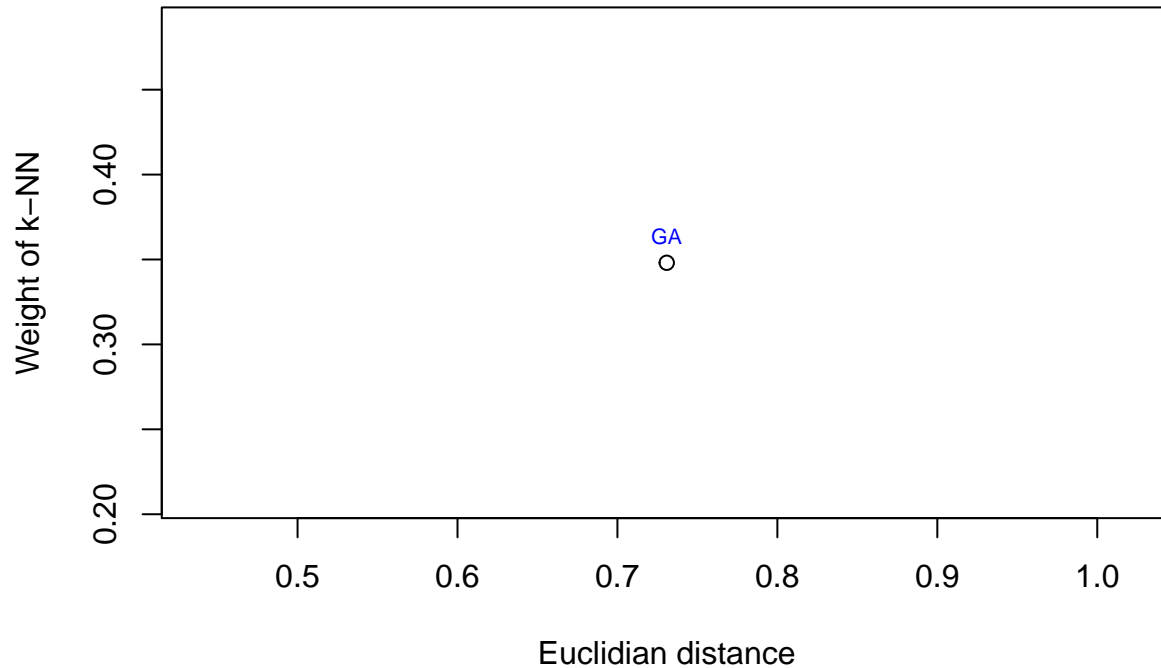
Map of best fitted reference sample



Best fitted reference sample:

- Site: Gabon, Near Lake Alombie, 60km stlich of Port Gentil
- Country: GA
- Region: Central Africa
- CITES: Appendix I
- Lat: -0.52
- Lon: 9.25

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
9.25	-0.52	Gabon, Near Lake Alombie, 60km stlich o	-23.5	7.2	19.7	-36.5	10.5

Country of prediction: **GA**

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

“Attention: only 1 reference site. Wilcoxon Test is uncertain.”

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**”