

Spatial assignment of test sample

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Contents

Input	1
Isotope values of test sample	1
Output	1
Model	1
Map of best fitted reference sample	2
Best fitted reference entries	3
Testing robustness of assignment: Wilcoxon signed rank test	3
P-values for the k nearest neighbours in Wilcoxon Test	3
Goodness of fit of test sample:	4

Input

Website Identifier: 228

Isotope values of test sample

Table 1: Isotope values of test sample

13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
-22	11	14.6	-36.9	7.5

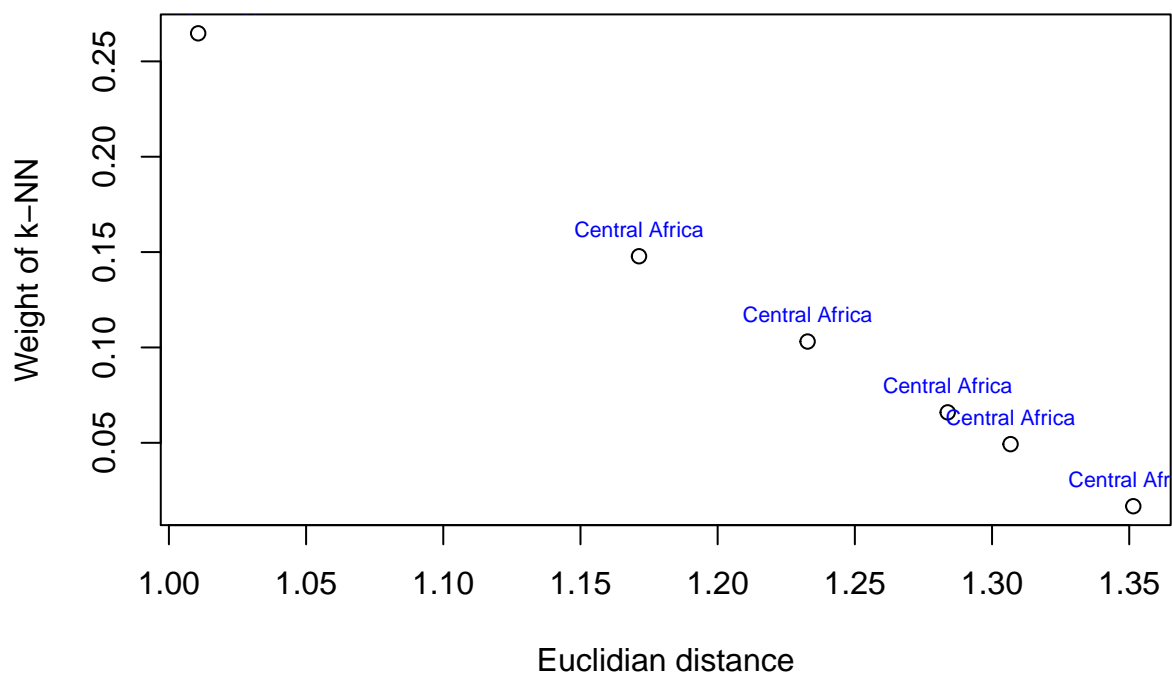
Output

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**

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
16.20	-3.40	Dem. Rep. Congo, Tua	-22.8	10.2	14.8	-42.0	9.8
29.50	0.45	Dem. Rep. Congo, Beni	-23.5	10.9	15.9	-43.2	7.7
27.57	2.09	Dem. Rep. Congo, Wamba	-23.2	9.5	15.9	-33.7	6.7
12.47	4.98	Cameroon	-22.8	9.3	15.0	-45.5	6.7
17.17	-3.29	Dem. Rep. Congo, Monkana	-22.5	9.2	15.4	-45.0	6.5
22.33	-2.68	Dem. Rep. Congo, Momu	-23.7	10.8	16.0	-44.8	7.1

Region of prediction: Central Africa

Testing robustness of assignment: Wilcoxon signed rank test

If $p\text{-value} > 0.05$, 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

“0.0144765, 0.0000902, 0.0000030, 0.0000019, 0.0000007, 0.0000004”

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**”