

Spatial assignment of test sample

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Input

Website Identifier:

Isotope values of test sample

Table 1: Isotope values of test sample

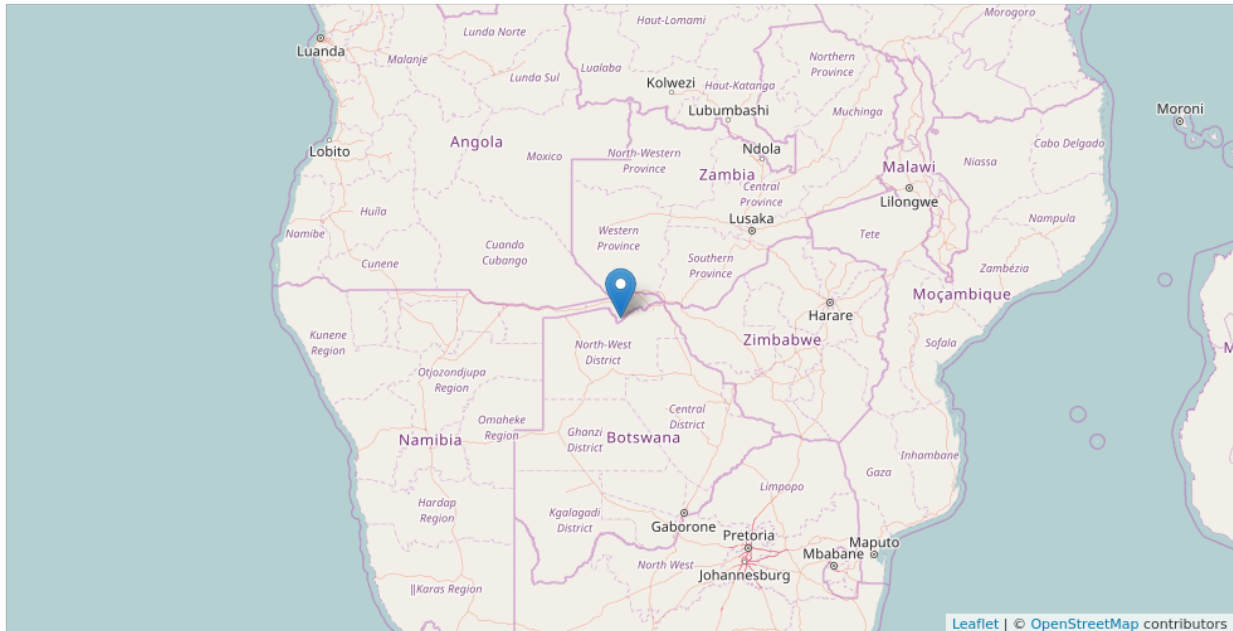
13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
-20.6	9.5	22.5	-35.6	6.4

Output

Model

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

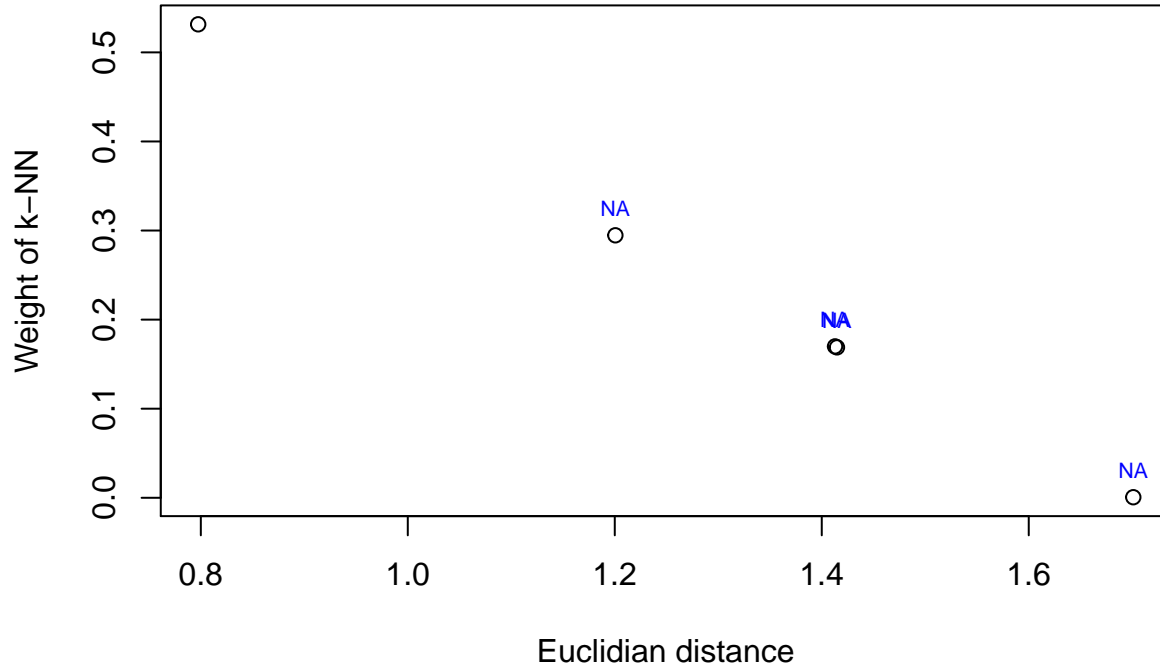
Map of best fitted reference sample



Best fitted reference sample:

- Site: Northeast Namibia, Mamili National Park
- Country: NA
- Region: Southern Africa
- CITES: Appendix I
- Lat: -18.35119
- Lon: 23.67365

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
23.67	-18.35	Northeast Namibia, Mamili National Park	-19.8	9.6	21.5	-37.3	7.9
24.52	-17.83	Salambala Conservancy, Northeast Namibia	-20.4	9.3	23.0	-28.1	9.6
23.06	-17.80	Caprivi, Southeast Namibia	-20.8	8.6	21.8	-32.4	10.7
23.34	-17.76	Northeast Namibia, Susuwe	-20.9	10.2	22.7	-37.9	11.0
24.25	-17.52	Sikunga Conservancy, Northeast Namibia	-20.7	9.6	21.6	-33.8	12.0

Country of prediction: NA

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

“0.9828649, 0.0002245, 0.0001771, 0.0000050, 0.0000036”

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: “**moderate fit**”