Spatial assignment of test sample

November 24, 2016

Contents

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
-21	6.6	23.1	-43.2	7.1

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
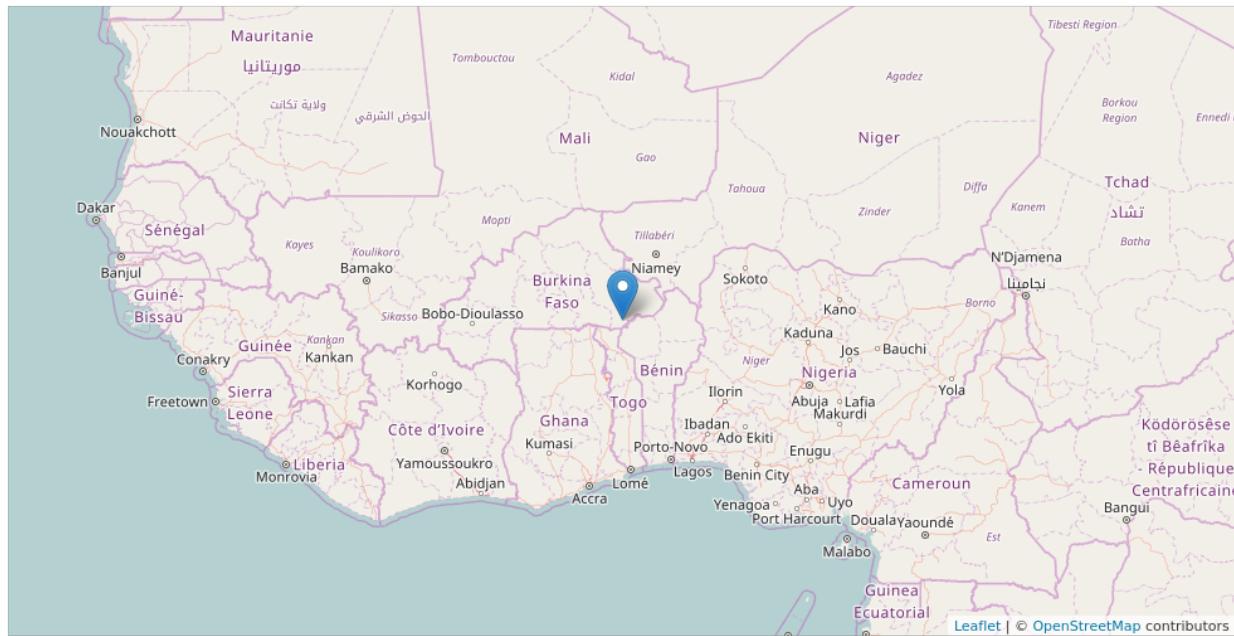
Best fitted reference sample:

- Site: Burkina Faso, Reserve partielle de Faune de Pama, Konkonbouri (Concession de la Chasse)
- Country: BF
- Region: West Africa
- CITES: Appendix I
- Lat: 11.283333
- Lon: 0.916667

Assignment of test sample to nearest neighbours
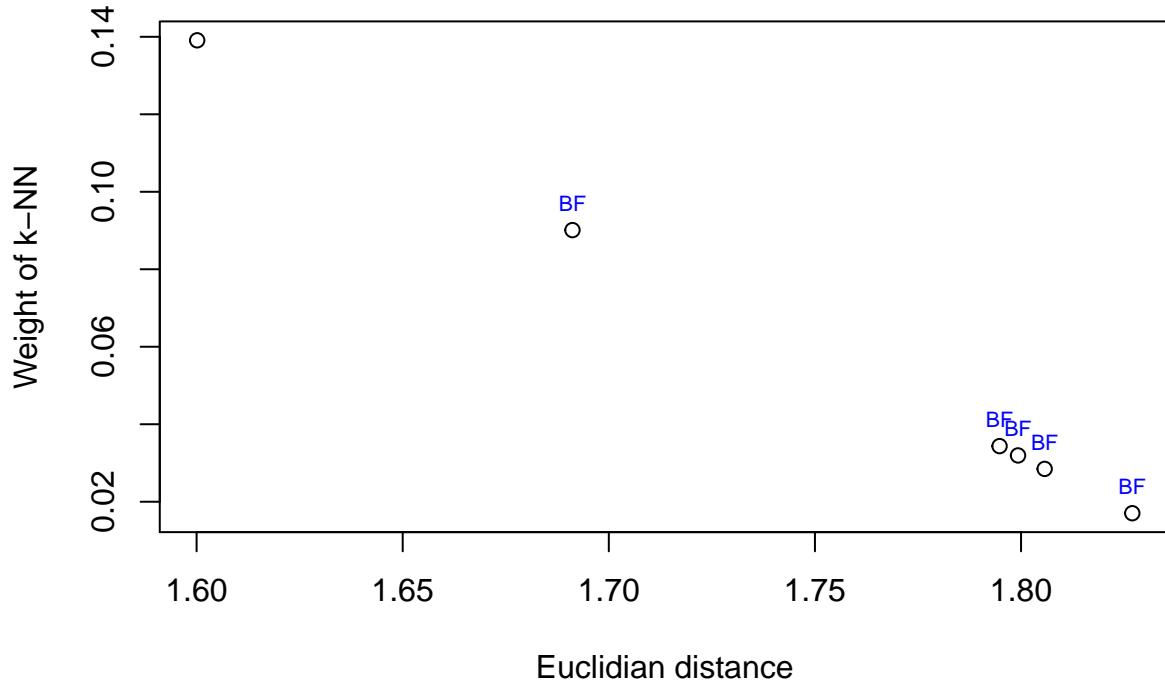
Best fitted reference entries

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
0.92	11.28	Burkina Faso, Reserve partielle de Faune	-20.9	5.5	20.5	-46.7	9.5
0.92	11.28	Burkina Faso, Reserve partielle de Faune	-20.9	5.3	20.5	-45.8	10.0
-1.48	11.08	Burkina Faso, Ranch de Nazinga	-22.7	5.3	21.0	-38.2	10.0
-1.48	11.08	Burkina Faso, Ranch de Nazinga	-22.7	5.1	21.7	-46.8	11.0
0.92	11.28	Burkina Faso, Reserve partielle de Faune	-22.7	5.6	20.6	-40.2	9.8
0.92	11.28	Burkina Faso, Reserve partielle de Faune	-23.2	5.8	20.9	-41.7	9.9

Country of prediction: BF

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

"0.000000026, 0.000000026, 0.000000026, 0.000000026, 0.000000026, 0.000000026"

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**"