Fitting ENM

Random Forest

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How Random Forest works

1. Create n decision trees.
2. Average or majority voting across all trees.
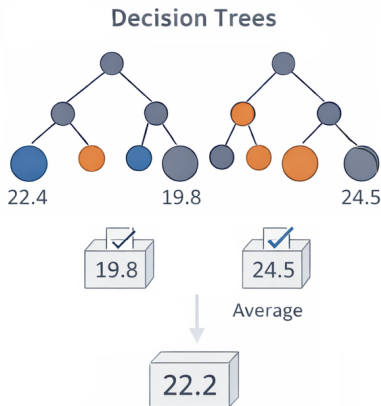

Figure 1: Conceptual representation of Random Forest algorithm

Load virtual species

Already created, just load it.

```r
d <- read.csv("../data/virtual.csv")
head(d)
```

```
      BIO01 BIO12 occ
1  9.987156   897   1
2  9.333240   472   1
3  9.853782   663   1
4  7.313562  1025   1
5  6.567688   689   1
6 11.305479   807   1
```

Fitting Random Forest

RF is a powerful machine-learning algorithm that has been applied extensively for ENM.

In *R*, RF is achieved using the package `randomForest` with the following specifications.
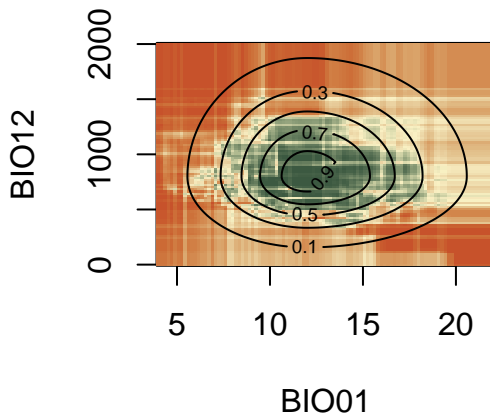
```
library(randomForest)

enm <- randomForest(
  occ ~ BIO01 + BIO12,
  data = d
)
```

> **i** Note
>
> A warning can be silenced with `as.factor(occ)`, which makes `randomForest()` consider a classification. We do not want this.

Random Forest inferred niche

Predictions from the RF model (colors) kinda match the actual niche (black lines).

The niche inferred by RF is very jagged.

This is due to how RF works internally and can only be partly fixed.