

# MODELS

## REGRESSION

GLM (+ less penalty)  
linear and quadratic terms allowed

- P/A version
- P-O version (down-weighting)

GAM

- P/A version
- P-O version (down-weighting)

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+ MaxEnt → P-O with default parameters  
(linked to regression models) (auto selection/exclusion features)

## PREDICTORS

Δ multicollinearity and parsimony!

### temperature

Default: mean/extremes/seasonality (bioclim)

Custom: try to represent the growing season and over-wintering conditions  
(e.g. sum of  $T^{\circ}$  between two dates...)

### nutrients

Surrogates: texture, soil depth, pH

Nitrogen

to be completed :-)

## TREE-BASED

BRT

- P/A version?
- P-O version (need to tune parameters) } no issue with class overlap?

RF

- P/A version
- P-O version with down-sampling (// class overlap)

## ENSEMBLE

BIOMOD with default settings  
(weighted averaging)

CUSTOM "VALAVI" ENSEMBLE  
Lasso GLM, GAM, MaxEnt, BRT and RF (down-sampled)  
(unweighted averaging)

## DISCARDED PREDICTORS

• light: only significant at a fine scale (// topography)?

• biotic interactions:  
// fundamental niche

• topography: effects are distal, indirect (impacts water, light...)

• land-use:  
need to be discussed!  
what are we modelling?

Is land-use a predictor or a filter (// PBM)?