Use truncated SBP with probit to do model selection for covariates and number of groups

* Do we select the optimal number of groups?
* Are the response curves still meaningful?
* Are spatial and temporal predictions good?

We adopt the following priors:

In relation to , we adopt a logistic regression formulation of a truncated stick breaking prior:

Notice that for the last group. This implies that has to be large (e.g., 10)

This logistic regression formulation enables us to automatically determine the optimal number of groups and create response curves for the individual species groups.

#---------------------------------------------------------------

We will sample these parameters in the following way:

#-------------------------------------------------------

FCDs:

* For :

Sample using a multinomial distribution

* For :

Where is the number of observations in location l assigned to group k

Taking logs, this becomes:

We will have to rely on a MH step to sample these guys

Because we propose using a truncated distribution, we need to add a correction to our acceptance probability:

* For :

Where and

* For :

Therefore

* For :

Therefore