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 probit regression formulation of a truncated stick breaking prior:

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

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We will sample these parameters in the following way:

Where

We will jointly sample and :

where

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

FCDs:

* For :

Sample using a multinomial distribution

* For :

If , then

For q<k, then:

For q>k, then

* For :

Where and

* For :

This implies that: