PROJECT. Natural and anthropogenic methane emissions

Natural and anthropogenic methane emissions in CCSM
Project team consists of:
David Lawrence and Sean Swenson, NCAR
Natalie Mahowald and Peter Hess (and postdoc), Cornell
Bill Riley (and postdoc), LLNL
Inez Fung (and students), UC Berkeley
Initial allocation of tasks:
Dave and Sean: Develop dynamic wetland distribution model, incorporating connected versus non-connected wetlands (for pH); help with development of prototype CH4 emissions model
Natalie and Peter: Testing and evaluation of emissions model once prototype emissions model has been implemented, focus on atmospheric methane and tropical emissions
Bill: Develop prototype emissions model, in collaboration with Dave
Inez: Collate anthropogenic emissions data and generate a gridded anthropogenic emissions dataset; static or evolving?

Methane emissions model requirements:
1. Modular, e.g. should work with CN or CASA
2. Model should represent four critical methane processes:
i. Allocation of carbon substrate available to methanogens
ii. CH4 production
iii. CH4 oxidation
iv. CH4 transport

Information on CH4 emissions models:
1. Review of recent mechanistic CH4 emissions models in Modelling northern peatland land surface processes, vegetation dynamics, and methane emissions; Rita Wania thesis, Section 1.5
2. LPJ-WhYMe described in Modelling northern peatland land surface processes, vegetation dynamics, and methane emissions; Rita Wania thesis, Section 4
Information on atmospheric CH4: ???