

ATE-BGC (Alpine Treeline Ecotone - BioGeochemical Cycles)

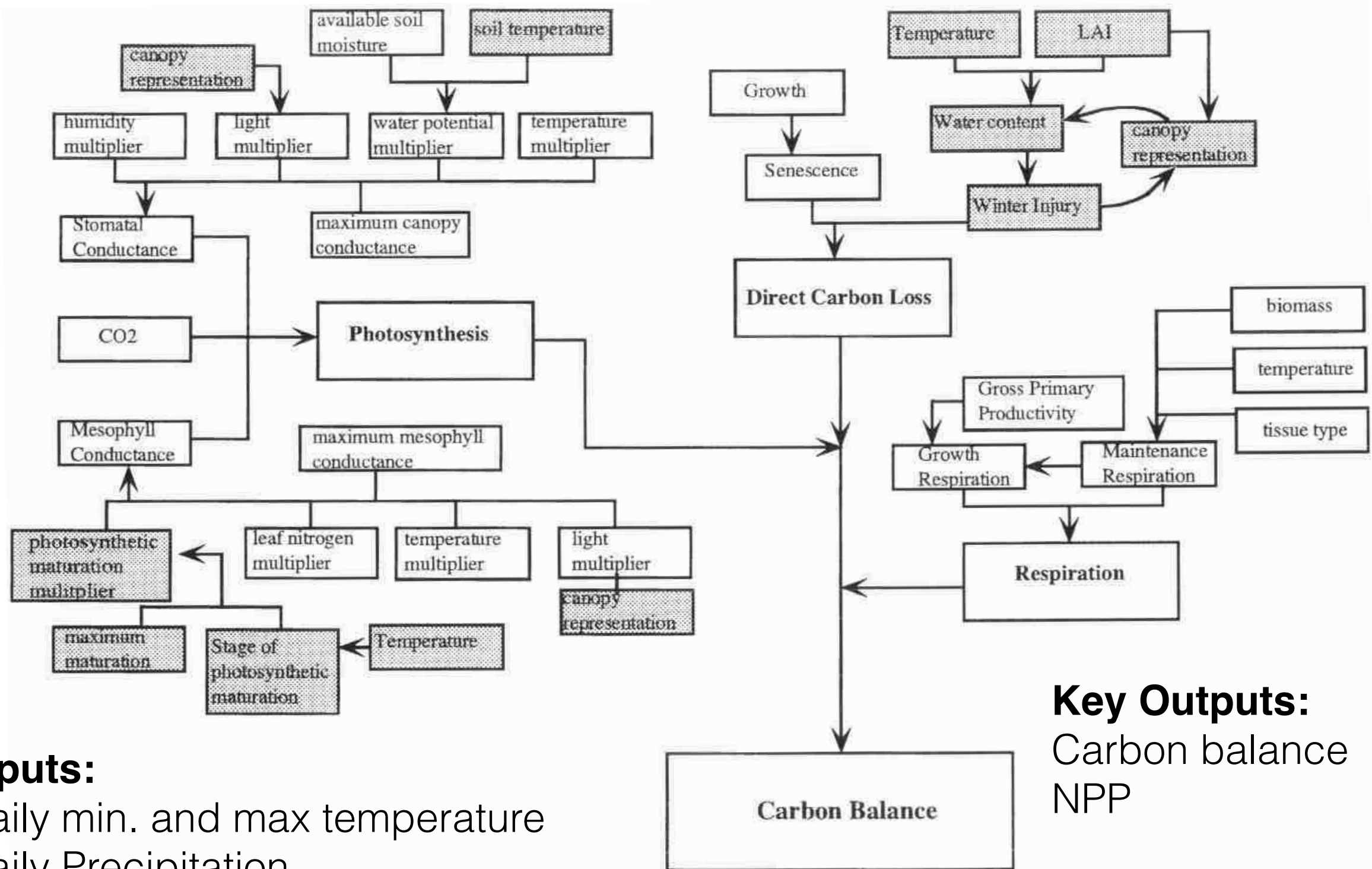
(Cairns 1994)

No URL - model not actively used

Model Objective:

Physiological process model derived from FOREST-BGC used to estimate carbon balance at treeline for prediction of treeline location

Simulates carbon and moisture fluxes and storage



Inputs:

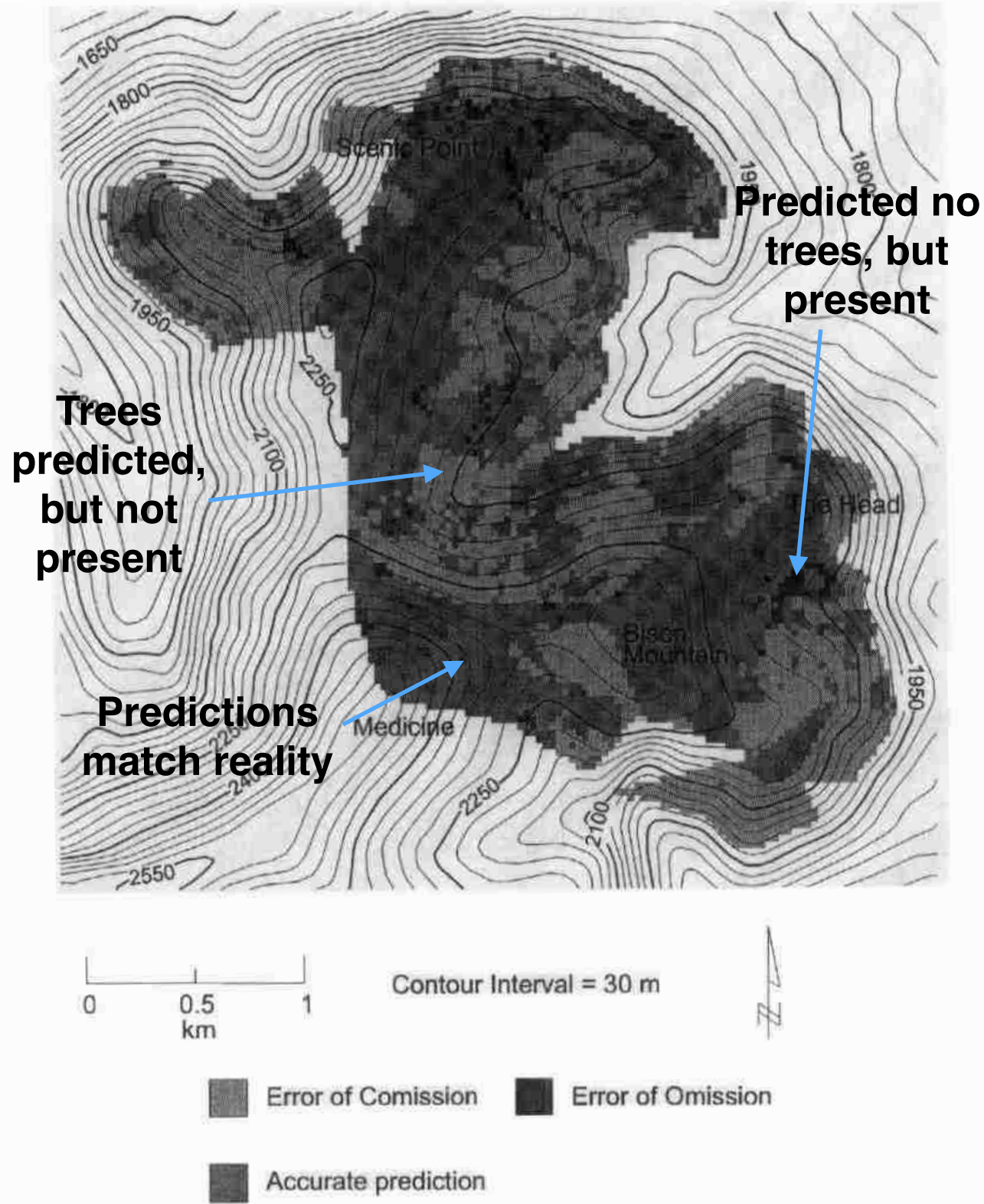
- Daily min. and max temperature
- Daily Precipitation
- Daily Radiation
- LAI (measured remotely or on the ground)

Key Outputs:

- Carbon balance
- NPP



Cairns 1998



Cairns & Malanson 1997

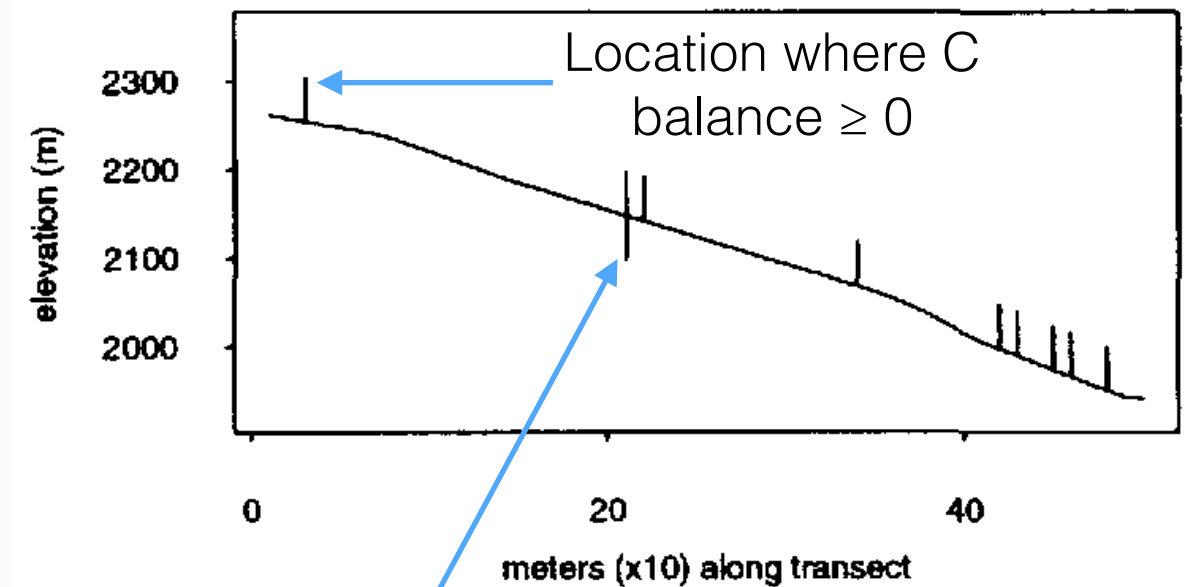
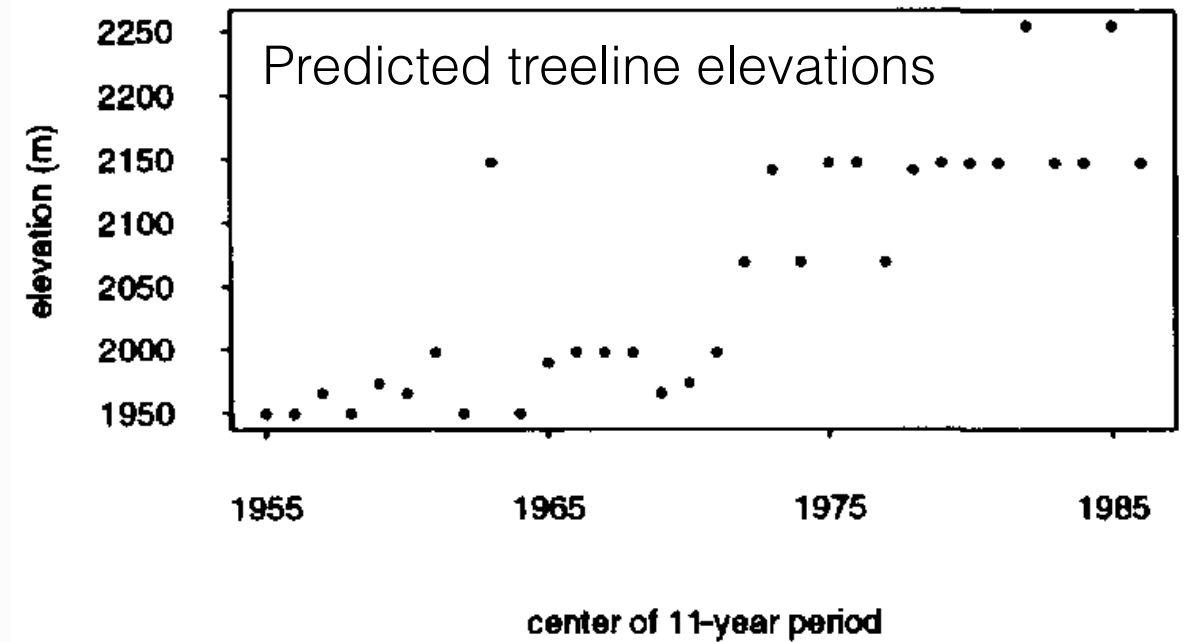
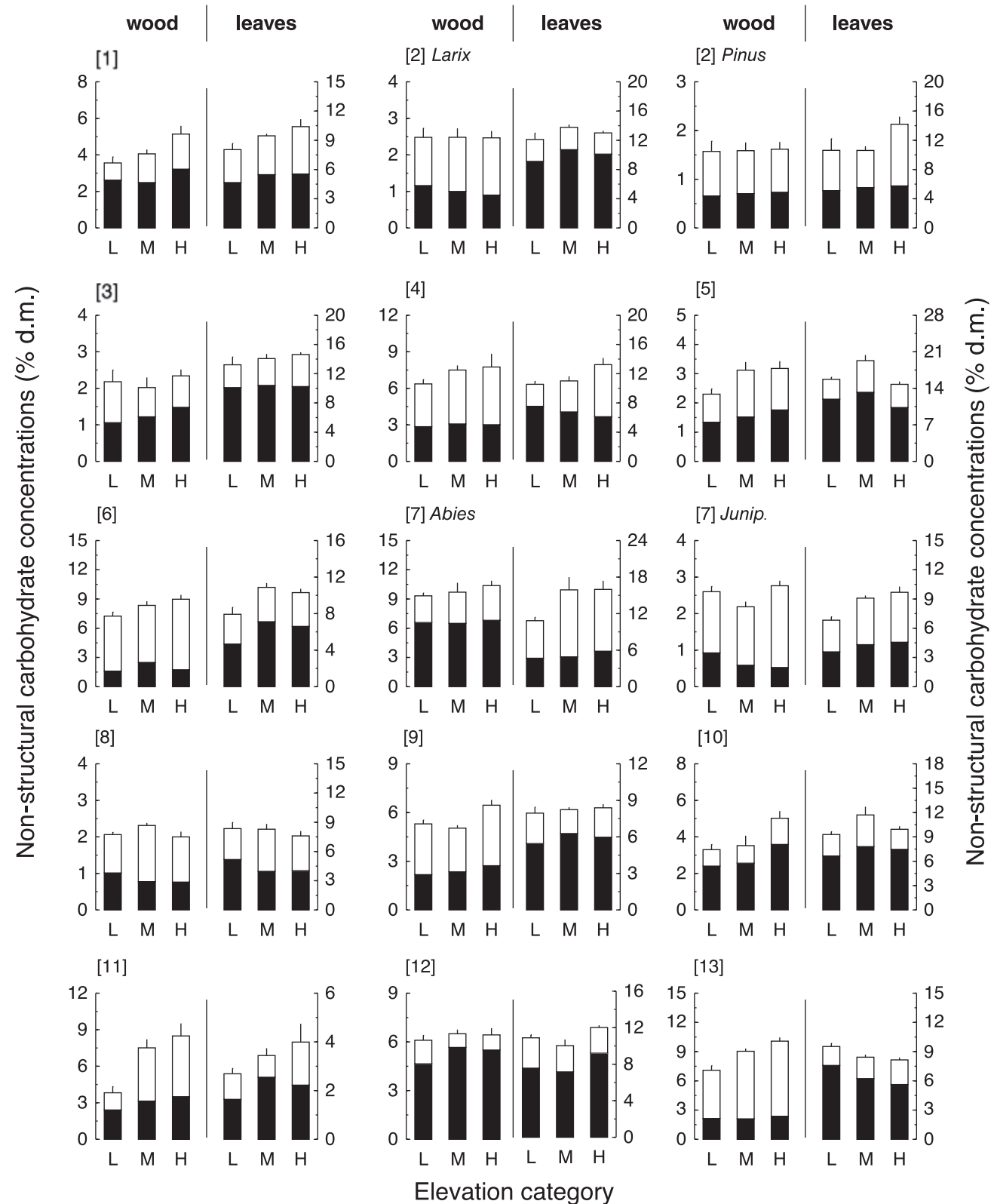


Figure 4. Error map of the Scenic Point simulation area. Errors of commission indicate locations where ATE-BGC predicts that trees should exist, but currently do not. Errors of omission are those where ATE-BGC predicts that trees should not be growing, but where they currently do exist.

Why didn't ATE-BGC catch on?

Growth-limitation hypothesis
(Körner 1998)

Very specific



Hoch &
Körner
2012