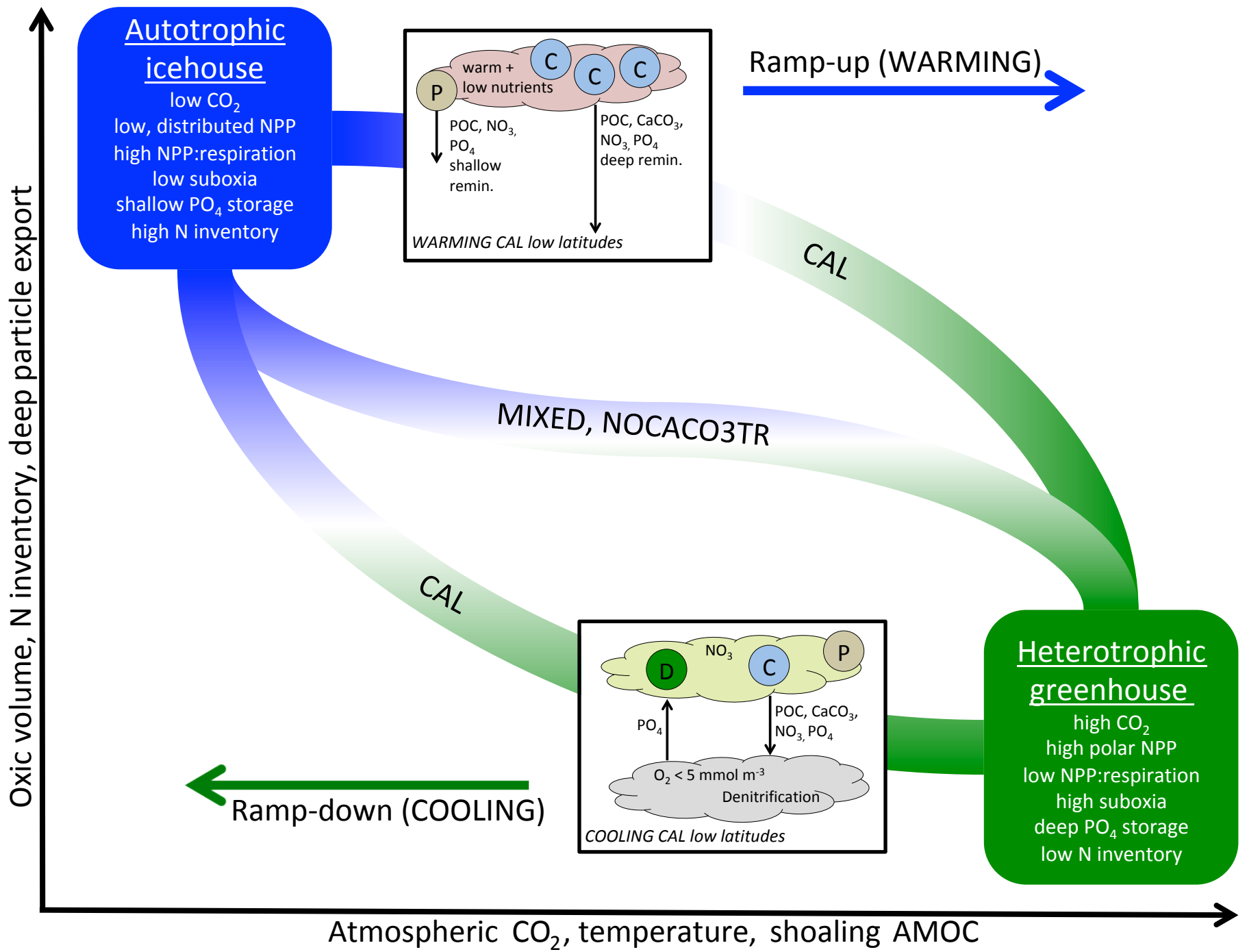
Autotrophic icehouse
low $CO_2$
low, distributed NPP
high NPP:respiration
low suboxia
shallow $PO_4$ storage
high N inventory
warm + low nutrients
P
C
C
C
POC, $NO_3$, $PO_4$ shallow remin.
POC, $CaCO_3$, $NO_3$, $PO_4$ deep remin.
WARMING CAL low latitudes
Ramp-up (WARMING)
CAL
MIXED, NOCACO3TR
CAL
$NO_3$
D
C
P
$PO_4$
POC, $CaCO_3$, $NO_3$, $PO_4$
$O_2$ < 5 mmol $m^{-3}$
Denitrification
COOLING CAL low latitudes
Ramp-down (COOLING)
Heterotrophic greenhouse
high $CO_2$
high polar NPP
low NPP:respiration
high suboxia
deep $PO_4$ storage
low N inventory
Oxic volume, N inventory, deep particle export
Atmospheric $CO_2$, temperature, shoaling AMOC