

492 conductance in response to elevated CO₂ concentration. The observations that stomata
493 of mature trees and trees subject to nutrient stress are generally unresponsive to
494 elevated atmospheric CO₂ concentration have been invoked to explain the
495 nonsignificant changes of stomatal conductance in response to elevated CO₂ (Dufrene
496 *et al.*, 1993; Curtis 1996). Indeed, the studied forests are regarded as mature and subject
497 to significant P stress as indicated by foliar N:P ratio. Although not significant, the
498 increasing tendency of foliar iWUE between 1955 and 1978 in Houping forest and
499 between 1962 and 1983 may therefore be associated with increasing tendency of
500 light-saturated photosynthesis resulted from elevated atmospheric CO₂ concentration
501 (Ainsworth and Rogers 2007).

502 Many tropical forest soils are P-limited due to a high degree of soil weathering and
503 associated low available P contents (Hedin *et al.*, 2003). There is increasing N
504 deposition in the tropics, and this region may see further increases in the coming
505 decades (van der Sleen *et al.*, 2014), further exacerbating existing P limitation.
506 Increases in N deposition might act in concert with projected increases in the
507 atmospheric CO₂ concentration to increase the growth and productive capacity of many
508 N-limited forests (Maurer *et al.*, 1999). Phosphorus limitations, however, can
509 apparently hinder projected increases in growth from N fertilization (Peñuelas *et al.*,
510 2013), consistent with reports suggesting that only forests with a well-balanced soil
511 nutrient status are able to increase their growth under higher atmospheric CO₂
512 concentration (Fernández-Martínez *et al.*, 2014, Wieder *et al.*, 2015). However, it
513 should be noted that in addition to increasing P limitation, the decreasing foliar iWUE
514 resulted from increasing atmospheric N deposition may also be attributed to ozone
515 damage (Holmes 2014), cation leaching, and soil acidification. Therefore, further
516 studies are needed to establish the relative importance of these processes in explaining
517 the observed declines in foliar iWUE and photosynthetic capacity.

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