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Chronic drought stress reduced but not protected Shantung maple

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A two-year experiment exposing Acer truncatum Bunge seedlings to elevated ozone (O_3) concentrations above ambient air (AO) and drought stress (DS) was carried out using open-top chambers (OTCs) in a suburb of Beijing in north China in 2012e2013. The results suggested that AO and DS had both significantly reduced leaf mass area (LMA), stomatal conductance (Gs), light saturated photosynthetic rate (Asat) as well as above and below ground biomass at the end of the experiment. It appeared that while drought stress mitigated the expression of foliar injury, LMA, leaf photosynthetic pigments, height growth and basal diameter, due to limited carbonfixation, the O_3 induced reductions in Asat, Gs and total biomass were enhanced 23.7%. 15.5% and 8.1% respectively. These data suggest that when the whole plant was considered that drought under the conditions of this experiment did not protect the Shantung maple seedlings from the effects of O_3.